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1. PURPOSE

THE PURPOSE OF THE DIDPC FUNCTION TEST IS TO CHECK THE OPERATION OF THE DIGITAL INPUT SECTION UNDER DIRECT PROGRAM CONTROL. STORAGE PROTECT VIOLATE IS CHECKED FOR PROPER INTERRUPT AND DSW. THE DSW IS FURTHER CHECKED FOR ITS ABILITY TO RESET. DIGITAL INPUT GROUPS ARE CHECKED FOR DATA BY BOTH READING AND SENSING. PROCESS INTERRUPTS ARE CHECKED BY OUTPUTTING THE PISW WHENEVER A P.I. IS RECEIVED. THE PISW WILL BE READ AND SENSED ON ALTERNATE INTERRUPTS. THE PISW IS ALSO CHECKED FOR ITS ABILITY TO RESET.

2. REQUIREMENTS

2.1 PROGRAM REQUIREMENTS

A. THIS PROGRAM MUST RUN UNDER CONTROL OF THE DIAGNOSTIC MONITOR. THE DIAGNOSTIC MONITOR PROGRAM USES 2047 STORAGE WORDS, AND THIS PROGRAM USES 1174 STORAGE WORDS.

B. PROGRAM EDIT

THE PROPER EDIT CARDS MUST BE ADDED AT THE END OF THIS PROGRAM DECK. SEE EDIT PROCEDURES IN APPENDIX (PARAGRAPH 6.1)

2.2 EQUIPMENT REQUIREMENTS

A. THE EQUIPMENT REQUIRED BY THE DIAGNOSTIC MONITOR IS ALSO REQUIRED FOR THIS PROGRAM.
B. AT LEAST 1 DIGITAL INPUT GROUP AND DI ADAPTER WITH OR WITHOUT DATA CHANNEL ADAPTER. DI GROUPS MAY BE CONTACT, VOLTAGE OR A COMBINATION OF THE TWO.
C. AT LEAST 1 PROCESS INTERRUPT GROUP AND ADAPTER. THE PROCESS INTERRUPT GROUPS MAY BE EITHER CONTACT OR VOLTAGE OR A COMBINATION OF THE TWO.

NOTE

IF PROCESS INTERRUPT IS NOT AVAILABLE, PROPER EDITING WILL BYPASS THE P.I CHECK. SEE APPENDIX PARAGRAPH 6.1.

3.0 OPERATING PROCEDURE

3.1 PROGRAM LOADING

STANDARD LOADING PROCEDURE AS DESCRIBED IN THE DIAGNOSTIC MONITOR USE PROCEDURE.

3.2 PROGRAM OPERATION

STANDARD MONITOR OPERATING PROCEDURES APPLY. THESE PROCEDURES ARE SUMMARIZED HERE. SEE D.M. USE PROCEDURE FOR DETAILS.

1. CLEAR STORAGE.
2. LOAD DIAGNOSTIC MONITOR.
3. SELECT MODE OF EXECUTION.
4. SELECT MONITOR CONTROL OPTIONS.
5. SELECT PROGRAM OPTIONS FROM.

   TABLE 0 PROGRAM CONTROL FUNCTION
   TABLE 1 ROUTINE SELECT FUNCTION
   TABLE 2 DI GROUP SELECT FUNCTIONS.
   TABLE 3 PISW READ/SENSE SELECT FUNCTION.

6. INSTRUCT MONITOR TO EXECUTE.

TABLE 0 CONTROL FUNCTION

SENSE/PROGRAM 0 1 2 3 4 5 6 7	
0 0 1 0 0 1 0 1	1. SET FUNCTION CC IN SENSE/PROGRAM SWITCHES 0 AND 1. 2. SET PID IN SENSE/PROGRAM SWITCHES 2 THRDUGH 7. 3. SET DESIRED CONTRDL DPTIONS IN DATA ENTRY SWITCHES 0-15. 4. PRESS CONSOLE INTERRUPT.

DATA ENTRY SWITCHES 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 — DESCRIPTION

1..TERMINATE PROGRAM

1.....BYPASS DATA PRINTDUTS,IE. D MESSAGES

TABLE 1 ROUTINE SELECT FUNCTION

SENSE/PROGRAM 0 1 2 3 4 5 6 7	
0 1 1 0 0 1 0 1	1. SET FUNCTION 01 IN SENSE/PROGRAM SWITCHES 0 AND 1. 2. SET PID IN SENSE/PROGRAM SWITCHES 2-7. 3. SET OPTION IN DATA ENTRY SWITCH 15. 4. PRESS CONSOLE INTERRUPT.

DATA ENTRY SWITCHES 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 — DESCRIPTION

1..LOOP ROUTINE 1

NOTE- WITHOUT LOOPING, ROUTINE 1 WILL BE RUN ONLY ONCE AT THE START OF THE PROGRAM. ONCE ROUTINE 2 IS STARTED,IT WILL BE CONTINOUSLY LOOPED AUTOMATICALLY.

TABLE 2 DI AND FISW GROUP SELECT FUNCTION

SENSE/PROGRAM 0 1 2 3 4 5 6 7	
1 0 1 0 0 1 0 1	1. SET FUNCTION 1C IN SENSE/PROGRAM SWITCHES 0 AND 1. 2. SET PIO IN SENSE/PROGRAM SWITCHES 2-7. 3. SET SELECTION IN DATA ENTRY SWITCHES. 4. PRESS CONSOLE INTERRUPT.

DATA ENTRY SWITCHES 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 — DESCRIPTION

0 C 0 0 0 C C — 1..SELECT NEXT SEQUENTIAL DI GRDUP

X X X X X X X — 1..SELECT THE DI GROUP WHOSE ADDRESS IS XXXXXXX

NOTE- FOR LOAD AND GO OPERATION,PROGRAM WILL SELECT AND RUN DI GRDUP ADDRESS CC40 AND THE PISW'S WHICH ARE DEFINED IN THE EDIT FIELD.

TABLE 3 PISW PEAD/SENSE SELECT FUNCTION

SENSE/PROGRAM 0 1 2 3 4 5 6 7	
1 1 1 3 3 1 0 1	1. SET FUNCTION 11 IN SENSE/PROGRAM SWITCHES 0 AND 1. 2. SET PID IN SENSE PROGRAM SWITCHES 2-7. 3. SET OPTION IN DATA ENTRY SWITCH 15. 4. PRESS CONSOLE INTERRUPT.

DATA ENTRY SWITCHES 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 — DESCRIPTION

C..READ PISW

1..SENSE PISW

3.3 PROGRAM HALTS

THIS PROGRAM HAS NO HALTS.

3.4 PROGRAM TERMINATION

A. STANDARD MONITOR TERMINATION.

B. TERMINATE PROGRAM SWITCH - USE THIS OPTION WHEN RUNNING IN BOOTSTRAP MODE AND LOADING OF NEXT PRDGRAM IS DESIRED.

4. PRINTOUTS

4.1 DATA MESSAGES

PID	MID	RID	RAD	DGRP ADRS	DATA
250C	DC01	0002	XXXX	XXXX	XXXX

PRINTOUT INDICATES DATA READ ON 1ST READ FOLLOWING SPECIFIED DI GRDUP ADDRESS SELECTION. DATA RECEIVED IS SAVED AS A COMPARE WDRD FOR FOLLOWING READS ON THE SAME REGISTER.

PID	MID	RID	RAD	DGRP ADRS	CMP WORD	PRSNT DATA
2500	DC02	0002	XXXX	XXXX	XXXX	XXXX

PRINTOUT OCCURS WHENEVER THE DATA JUST READ FROM THE SPECIFIED ADDRESS IS NOT THE SAME AS THE DATA USED AS THE COMPARE WORD. WHENEVER THIS PRINTOUT OCCURS, THE DATA INDICATED AS PRESENT DATA WILL BE SAVED AS THE NEW COMPARE WORD.

PID	MID	RID	RAD	PISW ADRS	PISW	READ SENSE
2500	DC03	0002	XXXX	XXXX	XXXX	ODOX

PRINTOUT OCCURS EACH TIME A PROCESS INTERRUPT IS RECEIVED FROM THE INDICATED PI GROUP. THE PISW INDICATES THE BIT WHICH CAUSED THE INTERRUPT THE READ SENSE INDICATOR WILL BE 0000 IF THE DATA WAS READ AND 0CC1 IF THE DATA WAS SENSED. READING AND SENSING OF THE PISW ALTERNATES WITH EACH INTERRUPT.

DI DPC FUNCTION TEST

4.2 ERROR MESSAGES

PID	MID	RID	RAD	DGRP ADRS	DSW
2500	ECC1	0001	XXXX	CC40	XXXX

MESSAGE INDICATES A LOST INTERRUPT WHEN VIOLATING PROTECTED STORAGE. DI GROUP ADDRESS C040 IS USED DURING THE READ. THE DSW INDICATES THE DI STATUS AFTER THE READ.

PID	MID	RID	RAD	DGRP READ SENS ADRS	DATA	DATA
2500	EQ02	0002	XXXX	XXXX	XXXX	XXXX

DI GROUP READ/SENSE COMPARE ERROR. THE DI GROUP IS READ AND SENSED ON EACH PASS OF THE ROUTINE. THE DATA SHOULD BE THE SAME.

PID	MID	RID	RAD	DGRP ADRS	DSW
2500	EC03	0001	XXXX	CC4C	XXXX

DI INDICATES BUSY WHILE OPERATING IN DIRECT PROGRAM CONTROL MODE.

PID	MID	RID	RAD	PISW ACRS	PISW
2500	ECC4	00D2	XXXX	XXXX	XXXX

THE PISW DID NOT RESET WHEN READ OR SENSED. THE PISW IS SENSED FOLLOWING A READ OR SENSE TO CHECK FOR RESET. THE PISW GIVEN IS THE RESULT OF THIS SENSE.

PID	MID	RID	RAD	DGRP PROT ACT ADRS	DATA	DATA
2500	ECC5	0C01	XXXX	0C4C	FFFF	XXXX

THIS PRINTOUT OCCURS IF, WHILE RUNNING THE STORAGE PROTECT TEST, THE PROTECTED AREA IS MODIFIED BY A READ. THE PROTECTED DATA IS FFFF, AND THE MODIFIED DATA AS INDICATED.

PID	MID	RID	RAD	DGRP ADRS	DSW	LAST DATA
2500	ECC6	0002	XXXX	XXXX	XXXX	XXXX

ANY INTERRUPT, OTHER THAN A PROCESS INTERRUPT, THAT OCCURS DURING ROUTINE 2 (DPC OPERATION) CONSTITUTES AN ERROR. THE DSW INDICATES THE CAUSE OF THE INTERRUPT. LAST DATA, IS THE CONTENTS OF THE READ IN AREA. DGRP ADDRESS IS THE PRESENT DI GROUP BEING USED.

DI DPC FUNCTION TEST

PID	MID	RID	RAD	DGRP ADRS	DSW
2500	EC07	0001	XXXX	004C	XXXX

THE WRONG DSW WAS RECEIVED FOLLOWING A STORAGE PROTECT VIOLATE INTERRUPT.

PID	MID	RID	RAD	DGRP ADRS	DSW
2500	EC08	000X	XXXX	XXXX	XXXX

THIS PRINTOUT OCCURS IF THE DSW FAILED TO RESET AFTER BEING SENSED IN INTERRUPT. THE DSW IS SENSED TWICE, AND IT IS THE RESULT OF THE SECOND SENSE THAT APPEARS IN THE MESSAGE.

5. COMMENTS.

THE DIDPC FUNCTION TEST IS MADE UP OF TWO ROUTINES. EACH ROUTINE CONTAINS ITS OWN CONTROL.

ROUTINE 1 IS USED TO CHECK STORAGE PROTECT VIOLATION, AND WILL NORMALLY BE RUN ONLY ONCE WHEN THE PROGRAM IS INITIALLY EXECUTED. ROUTINE 1 CAN BE LOOPED IF DESIRED (SEE TABLE 2) BUT THIS OPTION MUST BE REQUESTED PRIOR TO EXECUTING THE PROGRAM. ONCE ROUTINE 1 IS LOOPING, THE LOOP MAY BE TERMINATED BY SETTING ALL DATA ENTRY SWITCHES OFF, AND PLACING FUNCTION 01 PLUS P.I.D. 25 IN THE SENSE/PROGRAM SWITCHES AND PRESSING CONSOLE INTERRUPT. AT THE COMPLETION OF THE ROUTINE 1 PASS IN PROGRESS, THE PROGRAM WILL GO TO ROUTINE 2.

TO CHECK STORAGE PROTECT VIOLATION A TEST WORD OF FFFF/16 IS STORED IN THE READ IN AREA USED BY THE PROGRAM. THE READ IN AREA IS THEN STORAGE PROTECTED AND AN XIO READ COMMAND ISSUED TO DI GROUP ADDRESS 40. IF A S.P.V. INTERRUPT DOES NOT OCCUR, ERROR MESSAGE E001 WILL BE PRINTED. IF AN INTERRUPT IS RECEIVED, THE DSW IS CHECKED FOR BIT 1 BEING ON. FOLLOWING THE INTERRUPT CHECK, THE PROTECTED AREA IS CHECKED TO INSURE IT CONTAINS THE TEST WORD FFFF/16. IF IT DOES NOT, AN ERROR MESSAGE WILL RESULT.

THE STORAGE PROTECT BIT IS CLEARED AT THE END OF ROUTINE 1, IN THE INITIALIZATION ROUTINE AND IN THE END ROUTINE.

ROUTINE 2 IS USED TO CHECK DIGITAL INPUT GROUPS AND PROCESS INTERRUPTS. ROUTINE 2 WILL CONTINOUSLY LOOP UNTIL THE PROGRAM IS DEEXECUTED.

INPUT DATA CAN BE INSERTED INTO THE DIGITAL INPUT GROUPS AT THE SCREW DOWN TERMINATIONS BY MANUALLY SIMULATING CONTACT OPERATION OR VOLTAGE CHANGES. PROCESS INTERRUPTS MAY BE INITIATED IN THE SAME MANNER.

DIGITAL INPUTS

ROUTINE 2 WILL BEGIN OPERATION BY READING AND SENSING DI GROUP ADDRESS 40 AND PRINTING THE DATA RECEIVED ON THE OUTPUT DEVICE. IF A REQUEST FOR A SPECIFIC DI GROUP WAS MADE PRIOR TO PROGRAM EXECUTION, IT WILL BE HONORED ON THE SECOND PASS OF THE ROUTINE. ONCE A REQUEST IS HONORED, THE ROUTINE WILL CONTINUE TO LOOP WITH THAT REQUEST, UNTIL A NEW REQUEST IS RECEIVED.

WHEN A REQUEST IS RECEIVED, AND A SPECIFIC DI GROUP ADDRESS IS SPECIFIED, THE ADDRESS WILL BE CHECKED TO INSURE THAT IT IS NOT LESS THAN 40 AND NOT GREATER THAN THE ADDRESS ENTERED IN THE DI EDIT CARD. IF THE REQUESTED ADDRESS IS NOT WITHIN THESE LIMITS, THE PROGRAM WILL AUTOMATICALLY SELECT DI GROUP ADDRESS 40.

DI DPC FUNCTION TEST

WHEN A DI GROUP CHANGE IS REQUESTED, AND AN ADDRESS IS NOT SPECIFIED, THE PROGRAM WILL SELECT THE NEXT SEQUENTIAL DI GROUP, PROVIDED ITS ADDRESS IS NOT GREATER THAN THE ADDRESS SPECIFIED IN THE DI EDIT CARD. IF THE NEXT SEQUENTIAL DI GROUP ADDRESS IS GREATER THAN THE ONE SPECIFIED ON THE EDIT CARD, THE PROGRAM WILL SELECT ADDRESS 4D. IN THIS MANNER A CONTINUOUS LOOP IS CREATED FOR SEQUENTIAL SELECTION OF DI GROUPS.

THE DI GROUPS ARE BOTH READ AND SENSED ON EACH PASS OF ROUTINE 2. THE READ AND SENSE DATA IS CHECKED TO INSURE THAT THEY ARE THE SAME. AN ERROR MESSAGE RESULTS IF THEY ARE NOT.

THE DATA RECEIVED ON THE FIRST READ AFTER THE DI GROUP IS SELECTED, WILL BE PRINTED ON THE OUTPUT DEVICE. THE DATA IS PRINTED TO INDICATE INITIAL REGISTER CONTENTS BEFORE ANY MANUAL DATA IS INSERTED INTO THE SELECTED GROUP.

THE FIRST READ DATA IS ALSO SAVED AS THE INITIAL COMPARE WORD TO WHICH ALL SUBSEQUENT READ DATA IS COMPARED. WHEN THE REGISTER CONTENTS CHANGE AND A NO COMPARE OCCURS, DATA MESSAGE D002 WILL BE PRINTED, AND THE DATA CAUSING THE NO COMPARE WILL BE SAVED AS A NEW COMPARE WORD. IN THIS MANNER, THE PROGRAM WILL PRINT ANY DETECTED CHANGE OF A BIT OR BITS FROM 0 TO 1 OR FROM 1 TO 0.

ANY DI INTERRUPT RECEIVED DURING ROUTINE 2 WILL RESULT IN AN ERROR PRINTOUT.

PROCESS INTERRUPT

PROCESS INTERRUPTS, WHEN RECEIVED, RESULT IN THE READING OR SENSING OF THE PISW ASSOCIATED WITH THE PISW GROUP CAUSING THE INTERRUPT. READING OR SENSING IS AN OPERATOR SELECT FUNCTION (REFER TO TABLE 3) THE PISW CONTENT IS PRINTED ON THE OUTPUT DEVICE FOLLOWING EACH PROCESS INTERRUPT RECEIVED. FAILURE OF A PISW GROUP TO CAUSE AN INTERRUPT IS INDICATED BY THE LACK OF A DD03 PRINTOUT.

IMMEDIATLY FOLLOWING THE READ OR SENSE OF THE PISW, IT IS SENSED AGAIN TO CHECK FOR PROPER RESET. FAILURE TO RESET RESULTS IN AN ERROR MESSAGE.

IF A PROCESS INTERRUPT OCCURS FROM A PISW GROUP NOT PRESENTLY SELECTED, OR IF THE SELECTED PISW GROUP INTERRUPTS TO THE WRONG LEVEL, THE INTERRUPT WILL BE SERVICED BY THE DIAGNOSTIC MONITOR. THIS WILL BE INDICATED BY THE MONITOR PRINTING MESSAGE ED09.

NOTE

IT IS POSSIBLE FOR THE DIDPC PROGRAM TO INDICATE FALSE PISW CONTENTS IN MESSAGE DD03 IF THE FOLLOWING CONDITIONS OCCUR SIMULTANEOUSLY.

1. TWO PROCESS INTERRUPTS ARE RECEIVED AT THE SAME TIME. ONE INTERRUPT TO BE SERVICED BY THE DIAG. MONITOR, AND THE OTHER TO BE SERVICED BY THE DIDPC FUNCTION TEST.

2. THE PROCESS INTERRUPT BEING SERVICED BY THE DIAG MONITOR IS ON A HIGHER INTERRUPT LEVEL THAN THE PROCESS INTERRUPT TO BE SERVICED BY THE DIDPC PROGRAM.

3. THE PISW ADDRESS WHICH CAUSED THE INTERRUPT BEING SERVICED BY THE MONITOR IS 1 LESS THEN THE PISW ADDRESS CAUSING THE INTERRUPT TO BE SERVICED BY THE DIDPC PROGRAM.

   DUE TO THE MANNER IN WHICH THE DIAG MONITOR MUST RESET THE DSW OR PISW ON INTERRUPTS IT HANDLES, BOTH PISW'S WILL BE RESET UNDER THE ABOVE CONDITIONS. CONSEQUENTLY, WHEN THE DIDPC PROGRAM SERVICES ITS PROCESS INTERRUPT, THE PISW WILL BE 0DDD, AND IT WILL BE INDICATED AS SUCH IN MESSAGE DD03.

6.1 EDIT PROCEDURE

THE FOLLOWING EDIT PROCEDURE IS FOR CARD INPUT. THE EDIT PROCEDURE FOR PAPER TAPE INPUT IS LOCATED IN THE PAPER TAPE EDIT UTILITY PROGRAM DOCUMENTATION. THE PROPER EDIT CARDS MUST BE THE LAST CARDS IN THIS PROGRAM DECK. THE FOLLOWING FORMS ARE PROVIDED TO AID IN MANUALLY PREPARING THESE EDIT CARDS OR UPDATING EXISTING EDIT CARDS. IF IT IS NECESSARY TO PREPARE OR MODIFY EDIT CARDS, FILL IN THE NECESSARY DATA IN THE FORMS PRIOR TO PUNCHING THE CARDS. CARD COLUMNS THAT ARE SHADED SHOULD BE LEFT BLANK.

DDEF STANDS FOR DEVICE DEFINITION EDIT FIELD. IT INCLUDES:
1. THE INTERRUPT LEVEL ASSOCIATED WITH THIS DEVICE (USE HEX NOTATION, 00-17).
2. THE ILSW BIT POSITION ASSOCIATED WITH THIS DEVICE (USE HEX NOTATION, 0-F).

THE LAST EDIT CARD IS THE "END EDIT CARD". THE INFORMATION IN THIS CARD INCLUDES: 1. AN "E" IN COLUMN 1. 2. THE PID FOR THIS PROGRAM (COL. 2-3). 3. A TERMINATOR WORD OF "FFFF" (COL. 7-10).

COLUMN	1	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20	22	23	24	25
		PROGRAM ID				CARD SEQUENCE NUMBER				NUMBER OF ENTRIES (1-C)				DI DDEF ENTRY 1: INTERRUPT LEVEL (HEX)		ILSW BIT (HEX)	CHANNEL (OR F)	GROUP ADDRESS ENTRY 2: ADDR OF HIGHEST AVAIL DI GROUP (IN HEX)			
CARD 0	E	2	5	0	0	E	D	0	0	0	0	0	3	0	2	2	8	0	0	6	F
CARD 1	E	2	5	0	0	E	D	0	1	0	0										
CARD 2	E	2	5	0	0	E	D	0	2	0	0										
END	E	2	5	0	0	F	F	F	F												

	PISW DDEF ENTRY 3: INTERRUPT LEVEL (HEX)		ILSW BIT (HEX)	CHANNEL (OR F)	PISW DDEF ENTRY 4: INTERRUPT LEVEL (HEX)		ILSW BIT (HEX)	CHANNEL (OR F)	PISW DDEF ENTRY 5: INTERRUPT LEVEL (HEX)		ILSW BIT (HEX)	CHANNEL (OR F)	PISW DDEF ENTRY 6: INTERRUPT LEVEL (HEX)		ILSW BIT (HEX)	CHANNEL (OR F)	PISW DDEF ENTRY 7: INTERRUPT LEVEL (HEX)		ILSW BIT (HEX)	CHANNEL (OR F)
COLUMN	27	28	29	30	32	33	34	35	37	38	39	40	42	43	44	45	47	48	49	50
CARD 0	F	F	F	F				F				F				F				F
CARD 1																				
CARD 2																				
END																				

	PISW DDEF ENTRY 8: INTERRUPT LEVEL (HEX)		ILSW BIT (HEX)	CHANNEL (OR F)	PISW DDEF ENTRY 9: INTERRUPT LEVEL (HEX)		ILSW BIT (HEX)	CHANNEL (OR F)	PISW DDEF ENTRY A: INTERRUPT LEVEL (HEX)		ILSW BIT (HEX)	CHANNEL (OR F)	PISW DDEF ENTRY B: INTERRUPT LEVEL (HEX)		ILSW BIT (HEX)	CHANNEL (OR F)	PISW DDEF ENTRY C: INTERRUPT LEVEL (HEX)		ILSW BIT (HEX)	CHANNEL (OR F)
COLUMN	52	53	54	55	57	58	59	60	62	63	64	65	67	68	69	70	72	73	74	75
CARD 0				F				F				F				F				F
CARD 1																				
CARD 2																				
END																				

CARD 0 — CARD 0 SHOULD ALWAYS CONTAIN AT LEAST 3 ENTRIES. THE 1ST ENTRY IS THE DI DDEF AND THE 2ND IS THE ADDRESS OF THE HIGHEST DI GROUP AVAILABLE. (ADDR. ARE 40-FF) IF PROCESS INTERRUPTS ARE NOT TO BE CHECKED, THEN THE 3RD ENTRY SHOULD BE FFFF; OTHERWISE, PISW DDEF INFORMATION BEGINS WITH THE 3RD ENTRY...SEE NOTE 1.

CARDS 1 AND 2 — CARDS 1 AND 2 ARE USED TO ENTER PISW INFORMATION WHEN MORE THAN 9 PISW'S ARE AVAILABLE. THE DDEF'S START IN ENTRY 1 AND SHOULD BE IN THE FORMAT SHOWN FOR CARD 1. SEE NOTE 1.

CARD END — CARD END IS THE "END EDIT CARD". PUNCH EXACTLY AS IS SHOWN.

NOTE 1. — SINCE THE PISW EDIT FIELD IS VARIABLE, THE DIDPC PROGRAM REQUIRES A TERMINATOR TO INDICATE THE END OF THIS FIELD; THEREFORE, THE ENTRY FOLLOWING THE LAST PISW DDEF MUST BE FFFF.

CAUTION: — INSURE THAT THE PISW INTERRUPT LEVELS ENTERED CORRESPOND TO THE INTERRUPT LEVELS EDITED INTO THE DIAGNOSTIC MONITOR.

DI DPC FUNCTION TEST

```
0000                 ORG     *+2047
                     *
                     *            ********************
                     *            MONITOR EQUATE TABLE
                     *            ********************
                     *
012C                 BEGIN EQU   300
0120                 START EQU   BEGIN+1
012E                 END   EQU   START+1
012F                 LDG   EQU   ENO+1
0130                 ERRDR EQU   LDG+1
0131                 REQOV EQU   ERRDR+1
0132                 RELOV EQU   REQOV+1
0133                 CRCK  EQU   RELOV+1
                     *            **************************
                     *            OIDPC PROGRAM STATUS TABLE
                     *            **************************
                     *
07FF 0  2500         PIO   DC    /2500      PROGRAM ID
0600 0  0000         RID   DC    0          ROUTINE NUMBER
0801 0  0000         RAD   DC    0          ROUTINE ADDRESS
0802 0  0000         SW0   DC    0          FUNCTION 00 ENTRY
0803 0  0000         SW1   DC    0          FUNCTION 01 ENTRY
0804 0  0000         SW2   DC    0          FUNCTION 10 ENTRY
0805 0  0000         SW3   DC    0          FUNCTION 11 ENTRY
0806 1  0A1D         IPA   DC    INIDI      INITIALIZATION ADDRS
0807 1  0A69         LPA   DC    DIOPC      LOOP PROGRAM ADDRESS
0808 1  0C8E         EPA   DC    OIEND      END PROGRAM ADDRESS
0809 0  0000         MLSCF DC    0          INTERRUPT SEQ CONTRL
080A 0  0000               DC    0          MAIN LINE SEQ CONTRL
0808 0  FFFF         TERM  DC    /FFFF
                     *
                     *            **MONITOR EDIT CONSTANTS**
                     *
080C 1  0C9D               DC    PENO
0800 0  0000               DC    0
080E 0  0000               DC    0
080F 0  0000               DC    0
0810 0  0000               DC    0
0811 0  0000               DC    0
                     *
                     *            ** DIDPC EDIT DATA **
                     *
0812    0018         EDIT  BSS   27         EDIT FIELD
                     *
                     *            *********************
                     *            PI INTERRUPT ROUTINES
                     *            *********************
                     *
082D 0  0000         DVA00 DC       0       DEVICE ASSIGNMENT
082E 0  0000               DC       0       INTERRUPT ENTRY      IE
082F 01 C4000995           LD   L   PICMN   SAVE COMMON ROUTINE
0831 0  D009               STO      ETY00   *ENTRY CONTENTS
0832 0  6300               LDX   3  0       SET PI TABLE POINTER
0833 01 44000995           BSI  L   PICMN   COMMON ROUTINE CALL  SRC
0835 1  082D               DC       DVA00
0836 0  C004               LO       ETY00   RESTORE COMMON RTN.
0837 01 D4000995           STD  L   PICMN   *ENTRY ADDRESS
0839 01 4C80082E           BSC  I   DVA00+1 RETURN TO USER       IX
                     *
0838 0  0000         ETY00 DC       0       ENTRY CONTENTS HOLO
                     *
083C 0  0000         DVA01 DC       0       OEVICE ASSIGNMENT
083D 0  0000               DC       0       INTERRUPT ENTRY      IE
083E 01 C4000995           LO   L   PICMN   SAVE COMMON ROUTINE
0840 0  0009               STO      ETY01   *ENTRY CONTENTS
0841 0  6302               LOX   3  2       SET PI TABLE POINTER
0842 01 44000995           BSI  L   PICMN   COMMON ROUTINE CALL  SRC
```


DI DPC FUNCTION TEST

```
0844 1  083C               DC       DVA01
0845 0  C004               LD       ETY01   RESTORE COMMON RTN.
0846 01 04000995           STO  L   PICMN   *ENTRY ADDRESS
0848 01 4C80083D           BSC  I   DVA01+1 RETURN TO USER       IX
                     *
084A 0  0000         ETY01 DC       0       ENTRY CONTENTS HOLD
                     *
084B 0  0000         DVA02 DC       0       DEVICE ASSIGNMENT
084C 0  0000               DC       0       INTERRUPT ENTRY      IE
084D 01 C4000995           LD   L   PICMN   SAVE COMMON ROUTINE
084F 0  0009               STO      ETY02   *ENTRY CONTENTS
0850 0  6304               LDX   3  4       SET PI TABLE POINTER
0851 01 44000995           BSI  L   PICMN   COMMON ROUTINE CALL  SRC
0853 1  0848               DC       OVA02
0854 0  C004               LO       ETY02   RESTORE COMMON RTN.
0855 01 04000995           STO  L   PICMN   *ENTRY ADDRESS
0857 01 4C80084C           BSC  I   DVA02+1 RETURN TO USER       IX
                     *
0859 0  0000         ETY02 DC       0       ENTRY CONTENTS HOLO
                     *
085A 0  0000         DVA03 DC       0       DEVICE ASSIGNMENT
0858 0  0000               DC       0       INTERRUPT ENTRY      IE
085C 01 C4000995           LD   L   PICMN   SAVE COMMON ROUTINE
085E 0  D009               STO      ETY03   *ENTRY CONTENTS
085F 0  6306               LDX   3  6       SET PI TABLE POINTER
0860 01 44000995           BSI  L   PICMN   COMMON ROUTINE CALL  SRC
0862 1  085A               DC       OVA03
0863 0  C004               LD       ETY03   RESTORE COMMON RTN.
0864 01 D4000995           STO  L   PICMN   *ENTRY ADDRESS
0866 01 4C800858           BSC  I   DVA03+1 RETURN TO USER       IX
                     *
0868 0  0000         ETY03 DC       0       ENTRY CONTENTS HOLD
                     *
0869 0  0000         DVAC4 DC       0       OEVICE ASSIGNMENT
086A 0  0000               DC       0       INTERRUPT ENTRY      IE
0868 01 C4000995           LO   L   PICMN   SAVE COMMON ROUTINE
086D 0  D009               STO      ETY04   *ENTRY CONTENTS
086E 0  6308               LDX   3  8       SET PI TABLE POINTER
086F 01 44000995           BSI  L   PICMN   COMMON ROUTINE CALL  SRC
0871 1  0869               DC       DVA04
0872 0  C004               LD       ETY04   RESTORE COMMON RTN.
0873 01 D4000995           STO  L   PICMN   *ENTRY ADORESS
0875 01 4C80086A           BSC  1   OVA04+1 RETURN TO USER       IX
                     *
0877 0  0000         ETY04 DC       0       ENTRY CONTENTS HOLO
                     *
0878 0  0000         OVA05 DC       0       DEVICE ASSIGNMENT
0879 0  0000               DC       0       INTERRUPT ENTRY      IE
087A 01 C4000995           LO   L   PICMN   SAVE COMMON ROUTINE
087C 0  D009               STD      ETY05   *ENTRY CONTENTS
087D 0  630A               LDX   3  10      SET PI TABLE POINTER
087E 01 44000995           BSI  L   PICMN   COMMON ROUTINE CALL  SRC
0880 1  0878               DC       DVA05
0881 0  C004               LD       ETY05   RESTORE COMMON RTN.
0882 01 D4000995           STO  L   PICMN   *ENTRY AODRESS
0884 01 4C800879           BSC  I   DVA05+1 RETURN TO USER.      IX
                     *
0886 0  0000         ETY05 DC       0       ENTRY CONTENTS HOLD
                     *
0887 0  0000         DVA06 DC       0       DEVICE ASSIGNMENT
0888 0  0000               DC       0       INTERRUPT ENTRY      IE
0889 01 C4000995           LD   L   PICMN   SAVE COMMON ROUTINE
0888 0  D009               STO      ETY06   *ENTRY CONTENTS
088C 0  630C               LDX   3  12      SET PI TABLE POINTER
088D 01 44000995           BSI  L   PICMN   COMMON ROUTINE CALL  SRC
088F 1  0887               DC       OVA06
0890 0  C004               LD       ETY06   RESTORE COMMON RTN.
0891 01 04000995           STO  L   PICMN   *ENTRY ADDRESS
```

DI DPC FUNCTION TEST

```
0893 01 4C800888        BSC  I  DVA06+1     RETURN TO USER      IX    82501360
                  *                                                   82501370
0895 0  0000      ETY06 DC      0           ENTRY CONTENTS HOLD       82501380
                  *                                                   82501390
0896 0  0000      DVA07 DC      0           DEVICE ASSIGNMENT         82501400
0897 0  0000            DC      0           INTERRUPT ENTRY     IE    82501410
0898 01 C4000995        LD   L  PICMN       SAVE COMMON ROUTINE       82501420
089A 0  D009            STO     ETY07       *ENTRY CONTENTS           82501430
089B 0  630E            LDX  3  14          SET PI TABLE POINTER      82501440
089C 01 44000995        BSI  L  PICMN       COMMON ROUTINE CALL SRC   82501450
089E 1  0896            DC      DVA07                                 82501460
089F 0  C004            LD      ETY07       RESTORE COMMON RTN.       82501470
08A0 01 D4000995        STO  L  PICMN       *ENTRY ADDRESS            82501480
08A2 01 4C800897        BSC  I  DVA07+1     RETURN TO USER      IX    82501490
                  *                                                   82501500
08A4 0  0000      ETY07 DC      0           ENTRY CONTENTS HOLD       82501510
                  *                                                   82501520
08A5 0  0000      DVA08 DC      0           DEVICE ASSIGNMENT         82501530
08A6 0  0000            DC      0           INTERRUPT ENTRY     IE    82501540
08A7 01 C4000995        LD   L  PICMN       SAVE COMMON ROUTINE       82501550
08A9 0  D009            STO     ETY08       *ENTRY CONTENTS           82501560
08AA 0  6310            LDX  3  16          SET PI TABLE POINTER      82501570
08AB 01 44000995        BSI  L  PICMN       COMMON ROUTINE CALL SRC   82501580
08AD 1  08A5            DC      DVA08                                 82501590
08AE 0  C004            LD      ETY08       RESTORE COMMON RTN.       82501600
08AF 01 D4000995        STO  L  PICMN       *ENTRY ADDRESS            82501610
08B1 01 4C8008A6        BSC  I  DVA08+1     RETURN TO USER      IX    82501620
                  *                                                   82501630
08B3 0  0000      ETY08 DC      0           ENTRY CONTENTS HOLD       82501640
                  *                                                   82501650
08B4 0  0000      DVA09 DC      0           DEVICE ASSIGNMENT         82501660
08B5 0  0000            DC      0           INTERRUPT ENTRY     IE    82501670
08B6 01 C4000995        LD   L  PICMN       SAVE COMMON ROUTINE       82501680
08B8 0  D009            STO     ETY09       *ENTRY CONTENTS           82501690
08B9 0  6312            LDX  3  18          SET PI TABLE POINTER      82501700
08BA 01 44000995        BSI  L  PICMN       COMMON ROUTINE CALL SRC   82501710
08BC 1  08B4            DC      DVA09                                 82501720
08BD 0  C004            LD      ETY09       RESTORE COMMON RTN.       82501730
08BE 01 D4000995        STO  L  PICMN       *ENTRY ADDRESS            82501740
08C0 01 4C8008B5        BSC  I  DVA09+1     RETURN TO USER      IX    82501750
                  *                                                   82501760
08C2 0  0000      ETY09 DC      0           ENTRY CONTENTS HOLD       82501770
                  *                                                   82501780
08C3 0  0000      DVA10 DC      0           DEVICE ASSIGNMENT         82501790
08C4 0  0000            DC      0           INTERRUPT ENTRY     IE    82501800
08C5 01 C4000995        LD   L  PICMN       SAVE COMMON ROUTINE       82501810
08C7 0  D009            STO     ETY10       *ENTRY CONTENTS           82501820
08C8 0  6314            LDX  3  20          SET PI TABLE POINTER      82501830
08C9 01 44000995        BSI  L  PICMN       COMMON ROUTINE CALL SRC   82501840
08CB 1  08C3            DC      DVA10                                 82501850
08CC 0  C004            LD      ETY10       RESTORE COMMON RTN.       82501860
08CD 01 D4000995        STO  L  PICMN       *ENTRY ADDRESS            82501870
08CF 01 4C8008C4        BSC  I  DVA10+1     RETURN TO USER      IX    82501880
                  *                                                   82501890
08D1 0  0000      ETY10 DC      0           ENTRY CONTENTS HOLD       82501900
                  *                                                   82501910
08D2 0  0000      DVA11 DC      0           DEVICE ASSIGNMENT         82501920
08D3 0  0000            DC      0           INTERRUPT ENTRY     IE    82501930
08D4 01 C4000995        LD   L  PICMN       SAVE COMMON ROUTINE       82501940
08D6 0  D009            STO     ETY11       *ENTRY CONTENTS           82501950
08D7 0  6316            LDX  3  22          SET PI TABLE POINTER      82501960
08D8 01 44000995        BSI  L  PICMN       COMMON ROUTINE CALL SRC   82501970
08DA 1  08D2            DC      DVA11                                 82501980
08DB 0  C004            LD      ETY11       RESTORE COMMON RTN.       82501990
08DC 01 D4000995        STO  L  PICMN       *ENTRY ADDRESS            82502000
08DE 01 4C8008D3        BSC  I  DVA11+1     RETURN TO USER      IX    82502010
                  *                                                   82502020
08E0 0  0000      ETY11 DC      0           ENTRY CONTENTS HOLD       82502030
```


DI DPC FUNCTION TEST

```
                  *                                                   82502040
08E1 0  0000      DVA12 DC      0           DEVICE ASSIGNMENT         82502050
08E2 0  0000            DC      0           INTERRUPT ENTRY     IE    82502060
08E3 01 C4000995        LD   L  PICMN       SAVE COMMON ROUTINE       82502070
08E5 0  D009            STO     ETY12       *ENTRY CONTENTS           82502080
08E6 0  6318            LDX  3  24          SET PI TABLE POINTER      82502090
08E7 01 44000995        BSI  L  PICMN       COMMON ROUTINE CALL SRC   82502100
08E9 1  08E1            DC      DVA12                                 82502110
08EA 0  C004            LD      ETY12       RESTORE COMMON RTN.       82502120
08EB 01 D4000995        STO  L  PICMN       *ENTRY ADDRESS            82502130
08ED 01 4C8008E2        BSC  I  DVA12+1     RETURN TO USER      IX    82502140
                  *                                                   82502150
08EF 0  0000      ETY12 DC      0           ENTRY CONTENTS HOLD       82502160
                  *                                                   82502170
08F0 0  0000      DVA13 DC      0           DEVICE ASSIGNMENT         82502180
08F1 0  0000            DC      0           INTERRUPT ENTRY     IE    82502190
08F2 01 C4000995        LD   L  PICMN       SAVE COMMON ROUTINE       82502200
08F4 0  D009            STO     ETY13       *ENTRY CONTENTS           82502210
08F5 0  631A            LDX  3  26          SET PI TABLE POINTER      82502220
08F6 01 44000995        BSI  L  PICMN       COMMON ROUTINE CALL SRC   82502230
08F8 1  08F0            DC      DVA13                                 82502240
08F9 0  C004            LD      ETY13       RESTORE COMMON RTN.       82502250
08FA 01 D4000995        STO  L  PICMN       *ENTRY ADDRESS            82502260
08FC 01 4C8008F1        BSC  I  DVA13+1     RETURN TO USER      IX    82502270
                  *                                                   82502280
08FE 0  0000      ETY13 DC      0           ENTRY CONTENTS HOLD       82502290
                  *                                                   82502300
08FF 0  0000      DVA14 DC      0           DEVICE ASSIGNMENT         82502310
0900 0  0000            DC      0           INTERRUPT ENTRY     IE    82502320
0901 01 C4000995        LD   L  PICMN       SAVE COMMON ROUTINE       82502330
0903 0  D009            STO     ETY14       *ENTRY CONTENTS           82502340
0904 0  631C            LDX  3  28          SET PI TABLE POINTER      82502350
0905 01 44000995        BSI  L  PICMN       COMMON ROUTINE CALL SRC   82502360
0907 1  08FF            DC      DVA14                                 82502370
0908 0  C004            LD      ETY14       RESTORE COMMON RTN.       82502380
0909 01 D4000995        STO  L  PICMN       *ENTRY ADDRESS            82502390
090B 01 4C800900        BSC  I  DVA14+1     RETURN TO USER      IX    82502400
                  *                                                   82502410
090D 0  0000      ETY14 DC      0           ENTRY CONTENTS HOLD       82502420
                  *                                                   82502430
090E 0  0000      DVA15 DC      0           DEVICE ASSIGNMENT         82502440
090F 0  0000            DC      0           INTERRUPT ENTRY     IE    82502450
0910 01 C4000995        LD   L  PICMN       SAVE COMMON ROUTINE       82502460
0912 0  D009            STO     ETY15       *ENTRY CONTENTS           82502470
0913 0  631E            LDX  3  30          SET PI TABLE POINTER      82502480
0914 01 44000995        BSI  L  PICMN       COMMON ROUTINE CALL SRC   82502490
0916 1  090E            DC      DVA15                                 82502500
0917 0  C004            LD      ETY15       RESTORE COMMON RTN.       82502510
0918 01 D4000995        STO  L  PICMN       *ENTRY ADDRESS            82502520
091A 01 4C80090F        BSC  I  DVA15+1     RETURN TO USER      IX    82502530
                  *                                                   82502540
091C 0  0000      ETY15 DC      0           ENTRY CONTENTS HOLD       82502550
                  *                                                   82502560
091D 0  0000      DVA16 DC      0           DEVICE ASSIGNMENT         82502570
091E 0  0000            DC      0           INTERRUPT ENTRY     IE    82502580
091F 01 C4000995        LD   L  PICMN       SAVE COMMON ROUTINE       82502590
0921 0  D009            STO     ETY16       *ENTRY CONTENTS           82502600
0922 0  6320            LDX  3  32          SET PI TABLE POINTER      82502610
0923 01 44000995        BSI  L  PICMN       COMMON ROUTINE CALL SRC   82502620
0925 1  091D            DC      DVA16                                 82502630
0926 0  C004            LD      ETY16       RESTORE COMMON RTN.       82502640
0927 01 D4000995        STO  L  PICMN       *ENTRY ADDRESS            82502650
0929 01 4C80091E        BSC  I  DVA16+1     RETURN TO USER      IX    82502660
                  *                                                   82502670
092B 0  0000      ETY16 DC      0           ENTRY CONTENTS HOLD       82502680
                  *                                                   82502690
092C 0  0000      DVA17 DC      0           DEVICE ASSIGNMENT         82502700
092D 0  0000            DC      0           INTERRUPT ENTRY     IE    82502710
```

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092E 01 C4C00955          LO   L  PICMN    SAVE COMMON ROUTINE              82502720
0930 0  0009              STO       ETY17  *ENTRY CONTENTS                 82502730
0931 0  6322              LOX   3   34     SET PI TABLE POINTER             82502740
0932 01 44000995          BSI   L  PICMN   COMMON ROUTINE CALL   SRC       82502750
0934 1  092C              DC        DVA17                                   82502760
0935 0  C004              LO        ETY17  RESTORE COMMON RTN.              82502770
0936 01 D4000995          STO   L  PICMN   *ENTRY ADDRESS                  82502780
0938 01 4C800920          BSC   I  DVA17+1 RETURN TO USER          IX       82502790
                     *                                                    82502800
093A 0  0000         ETY17 DC       0      ENTRY CONTENTS HOLD             82502810
                     *                                                    82502820
0938 0  0000         DVA18 DC       0      DEVICE ASSIGNMENT               82502830
093C 0  0000               DC       0      INTERRUPT ENTRY          IE     82502840
093D 01 C4000995           LO   L  PICMN   SAVE COMMON ROUTINE            82502850
093F 0  0009               STO       ETY18 *ENTRY CONTENTS                 82502860
0940 0  6324               LOX   3   36     SET PI TABLE POINTER           82502870
0941 01 44000995           BSI   L  PICMN   COMMON ROUTINE CALL   SRC       82502880
0943 1  0938               DC        DVA18                                 82502890
0944 0  C004               LD        ETY18  RESTORE COMMON RTN.            82502900
0945 01 D4000995           STO   L  PICMN   *ENTRY ADDRESS                  82502910
0947 01 4C80093C           BSC   I  DVA18+1 RETURN TO USER          IX     82502920
                     *                                                    82502930
0949 0  0000         ETY18 DC       0      ENTRY CONTENTS HOLD             82502940
                     *                                                    82502950
094A 0  0000         DVA19 DC       0      DEVICE ASSIGNMENT               82502960
0948 0  0000               DC       0      INTERRUPT ENTRY          IE     82502970
094C 01 C4000995           LD   L  PICMN   SAVE COMMON ROUTINE            82502980
094E 0  0009               STO       ETY19 *ENTRY CONTENTS                 82502990
094F 0  6326               LDX   3   38     SET PI TABLE POINTER           82503000
0950 01 44000995           BSI   L  PICMN   COMMON ROUTINE CALL   SRC       82503010
0952 1  094A               DC        DVA19                                 82503020
0953 0  C004               LD        ETY19  RESTORE COMMON RTN.            82503030
0954 01 D4000995           STO   L  PICMN   *ENTRY ADDRESS                  82503040
0956 01 4C80094B           BSC   I  DVA19+1 RETURN TO USER          IX     82503050
                     *                                                    82503060
0958 0  0000         ETY19 OC       0      ENTRY CONTENTS HOLD             82503070
                     *                                                    82503080
0959 0  0000         DVA20 DC       0      DEVICE ASSIGNMENT               82503090
095A 0  0000               OC       0      INTERRUPT ENTRY          IE     82503100
0958 01 C4000995           LD   L  PICMN   SAVE COMMON ROUTINE            82503110
095D 0  0009               STO       ETY20 *ENTRY CONTENTS                 82503120
095E 0  6328               LOX   3   40     SET PI TABLE POINTER           82503130
095F 01 44000995           BSI   L  PICMN   COMMON ROUTINE CALL   SRC       82503140
0961 1  0959               DC        DVA20                                 82503150
0962 0  C004               LD        ETY20  RESTORE COMMON RTN.            82503160
0963 01 D4000995           STO   L  PICMN   *ENTRY ADDRESS                  82503170
0965 01 4C80095A           BSC   I  OVA20+1 RETURN TO USER          IX     82503180
                     *                                                    82503190
0967 0  0000         ETY20 DC       0      ENTRY CONTENTS HOLD             82503200
                     *                                                    82503210
0968 0  0000         DVA21 DC       0      DEVICE ASSIGNMENT               82503220
0969 0  0000               DC       0      INTERRUPT ENTRY          IE     82503230
096A 01 C4000995           LO   L  PICMN   SAVE COMMON ROUTINE            82503240
096C 0  0009               STO       ETY21 *ENTRY CONTENTS                 82503250
096D 0  632A               LDX   3   42     SET PI TABLE POINTER           82503260
096E 01 44000995           BSI   L  PICMN   COMMON ROUTINE CALL   SRC       82503270
0970 1  0968               DC        DVA21                                 82503280
0971 0  C004               LO        ETY21  RESTORE COMMON RTN.            82503290
0972 01 D4000995           STO   L  PICMN   *ENTRY ADDRESS                  82503300
0974 01 4C800969           BSC   I  DVA21+1 RETURN TO USER          IX     82503310
                     *                                                    82503320
0976 0  0000         ETY21 OC       0      ENTRY CONTENTS HOLD             82503330
                     *                                                    82503340
0977 0  0000         OVA22 DC       0      DEVICE ASSIGNMENT               82503350
0978 0  0000               DC       0      INTERRUPT ENTRY          IE     82503360
0979 01 C4000995           LO   L  PICMN   SAVE COMMON ROUTINE            82503370
097B 0  0009               STO       ETY22 *ENTRY CONTENTS                 82503380
097C 0  632C               LDX   3   44     SET PI TABLE POINTER           82503390
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097D 01 44000995          BSI   L  PICMN   COMMON R JTINE CALL   SRC       82503400
097F 1  0977              DC        OVA22                                   82503410
0980 0  C004              LO        ETY22  RESTORE COMMON RTN.              82503420
0981 01 D4000995          STO   L  PICMN   *ENTRY ADDRESS                   82503430
0983 01 4C800978          BSC   I  OVA22+1 RETURN TO USER          IX       82503440
                     *                                                     82503450
0985 0  0000         ETY22 DC       0      ENTRY CONTENTS HOLD              82503460
                     *                                                     82503470
0986 0  0000         DVA23 DC       0      DEVICE ASSIGNMENT                82503480
0987 0  0000               DC       0      INTERRUPT ENTRY          IE      82503490
0988 01 C4000995           LD   L  PICMN   SAVE COMMON ROUTINE              82503500
098A 0  0009               STO       ETY23 *ENTRY CONTENTS                  82503510
098B 0  632E               LDX   3   46     SET PI TABLE POINTER            82503520
098C 01 44000995           BSI   L  PICMN   COMMON ROUTINE CALL   SRC        82503530
098E 1  0986               DC        DVA23                                  82503540
098F 0  C004               LD        ETY23  RESTORE COMMON RTN.             82503550
0990 01 04000995           STO   L  PICMN   *ENTRY ADDRESS                   82503560
0992 01 4C800987           BSC   I  OVA23+1 RETURN TO USER          IX       82503570
                     *                                                     82503580
0994 0  0000         ETY23 DC       0      ENTRY CONTENTS HOLD              82503590
                     *                                                     82503600
                     *                  **********************             82503610
                     *                  PROCESS INTERRUPT COMMON           82503620
                     *                  INTERRUPT ROUTINE                  82503630
                     *                  **********************             82503640
                     *                                                     82503650
0995 0  0000         PICMN DC       0      SUBROUTINE ENTRY         SE      82503660
0996 01 C4800995           LD    I  PICMN  GET OVA ADDRESS                  82503670
0998 0  0000               STO       A+1                                    82503680
0999 0  D012               STO       B+1                                    82503690
099A 0  D001               STO       *+1                                    82503700
0998 00 C4000000           LD    L   0     SET INTERRUPTING                 82503710
099C 0  1008               SLA       8     *PISW ADDRESS IN TBL             82503720
099E 0  1808               SRA       8                                      82503730
099F 01 D7000904           STO   L3 PITBL                                   82503740
09A1 0  7301               MDX    3  1     ADD 1 TO TABLE INDEX             82503750
09A2 01 C4000AF0           LD    L   ONE   BUILD PISW READ                  82503760
09A4 0  1009               SLA       9     *COMMAND                         82503770
09A5 00 EC000000      A    OR    L   0                                      82503780
09A7 01 04000B07           STO   L  PIRO+1                                  82503790
09A9 01 C4000AF7           LD    L  SENSE  BUILD PISW SENSE                 82503800
09A8 00 EC000000      B    OR    L   0     *COMMAND                         82503810
09AD 01 D4000809           STO   L  PISN+1                                  82503820
09AF 01 C4000805           LD    L  SW3    CHECK IF READ OR SNS             82503830
09B1 0  4804               BSC       E     SKIP IF READ                     82503840
09B2 0  7008               MDX       PICM1                                  82503850
09B3 0  1010               SLA       16    RDSN INDICATOR TO                82503860
09B4 01 D4000AFE           STO   L  ROSN   *READ                            82503870
09B6 01 0C000806           XIO   L  PIRO   READ PISW                        82503880
09B8 01 C4000AF3           LO    L  PI1    GET DATA READ                    82503890
09BA 0  7006               MDX       PICM2                                  82503900
09BB 01 C4000AF0      PICM1 LD    L  ONE    RD/SN INDICATOR TO               82503910
09BD 01 D4000AFE           STO   L  ROSN   *SENSE                           82503920
09BF 01 0C000808           XIO   L  PISN   SENSE PISW                       82503930
09C1 01 D70009D4      PICM2 STO   L3 PITBL  PISW TO PI TABLE                 82503940
09C3 01 0C000808           XIO   L  PISN   CK IF PISW RESET                  82503950
09C5 0  4818               BSC       +-    SKIP IF NO RESET                 82503960
09C6 0  7006               MDX       *+6                                    82503970
09C7 01 04000AF4           STO   L  PI2    SAVE PISW.                       82503980
09C9 01 C70009D3           LD    L3 PITBL-1 GET FAILING ADDRESS             82503990
09CB 01 D4000AF5           STO   L  AODRS  SAVE AODRESS                     82504000
09CD 01 74010AFC           MDX   L  INT,1  SET INTERRUPT INDCTR             82504010
09CF 01 74010995           MDX   L  PICMN,1 MODIFY RETURN                   82504020
09D1 01 4C800995           BSC   I  PICMN  RETURN TO USER          SX       82504030
                     *                                                     82504040
09D4      0030       PITBL BSS   E  48     PI DATA TABLE                    82504050
                     *                                                     82504060
                     *                  **********                         82504070
```

DI DPC FUNCTION TEST

```
                   *             DI INTERRUPT ROUTINE
                   *             ********************
                   *
0A04 0  0000       DIINT DC       0          AREA CODE AND MOD
0A05 0  0000             DC       0                                 IE
0A06 01 0C000B00         XID  L   OISW       READ DSW AND SAVE
0AC8 01 D4000AFA         STO  L   DSW
0A0A 01 0C000800         XID  L   OISW       SENSE AGAIN FOR DSW
0A0C 01 D4000AF8         STO  L   OSW1       *RESET CHECK
0A0E 01 74000AFF         MDX  L   SPVSW,0    CHECK IF RTN 1
0A10 0  7003             MDX      DIN1
                   *
                   *             ** NOT RTN 1 **
                   *
0A11 01 67000A32         LDX  L3 DIER        SET MLSCF RETURN
0A13 0  7002             MDX      *+2
                   *
                   *             ** ROUTINE 1 **
                   *
0A14 01 67000A4E   DIN1  LDX  L3 OISPV       SET MLSCF RETURN
0A16 01 6F000809         STX  L3 MLSCF
                   *
0A18 01 4C800A05   DIN2  BSC  I   DIINT+1    EXIT
                   *
                   *             ************
                   *             BEGIN ROUTINE
                   *             ************
                   *
0A1A 00 4480012C   DIBGN BSI  I   BEGIN      XFER TO MON BEGIN
0A1C 1  07FF             DC       PID        *RTN WITH PID ADORS
                   *
                   *             *********************
                   *             INITIALIZATION ROUTINE
                   *             *********************
                   *
0A10 0  0000       INIOI DC       0                                 SE
0A1E 01 C4000AEE         LD   L   OISRT      SET STARTING OI GRP
0A20 01 D4000AEF         STO  L   DIREG      *ADDRS TO 0040 HEX
0A22 0  1C10             SLA      I6         CLEAR PISW RESET
0A23 01 D4000AF4         STO  L   PI2        *CHECK HOLO LOCATION
0A25 0  6130             LOX    1 48         CLEAR PI PRINT
0A26 01 D50009D3         STO  L1 PITBL-1     *OATA TABLE
0A28 0  71FF             MDX    1 -1
0A29 0  70FC             MDX      *-4
0A2A 0  2C40             DC       /2C40      CLEAR STORAGE PROTCT
0A2B 1  0AF6             DC       OI1        *AREA
0A2C 01 C4000807         LO   L   LPA        SET UP PROGRAM
0A2E 01 D4000809         STO  L   MLSCF      *RETURN
0A30 01 4C800A1D         BSC  I   INIOI      RETURN TO MONITOR      SX
                   *
                   *             *********************
                   *             OIOPC MAIN LINE PROGRAM
                   *             *********************
                   *
                   *
                   *             ** ERROR INTRP RETURN **
                   *
0A32 01 C4000AEF   DIER  LO   L   OIREG      SET GRP AODRESS IN
0A34 01 D4000C8A         STO  L   MESAG+3    *MESSAGE
0A36 01 C400JAF8         LO   L   OSW1       CHECK IF DSW RESET
0A38 01 04000C88         STO  L   MESAG+4
0A3A 0  4818             BSC      *-
0A3B 0  7004             MDX      DIER1
                   *
                   *******************************************
0A3C 01 44000C48         BSI  L   LOGER      GO PRINT ERROR 8       SRC
0A3E 0  0002             DC       2          WORO COUNT
0A3F 0  E008             DC       /E008      MESSAGE ID
```


DI DPC FUNCTION TEST

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                   *******************************************
                   *
0A40 01 C4000AFA   DIER1 LD   L   DSW        SET OSW IN MESSAGE
0A42 01 D4000C8B         STO  L   MESAG+4
0A44 01 C4000AF8         LO   L   DI1        SET LAST READ DATA
0A46 01 D4000C8C         STO  L   MESAG+5    *IN MESSAGE
                   *
                   *******************************************
0A48 01 44000C48         BSI  L   LOGER      PRINT ERROR 6          SRC
0A4A 0  0003             DC       3          WORD COUNT
0A4B 0  E006             DC       /E006      MESSAGE ID
                   *******************************************
                   *
0A4C 01 4C00085D         BSC  L   DI06+6
                   *
                   *             ** SPV INTRP RETURN **
                   *
0A4E 01 C4000AEE   DISPV LD   L   DISRT      GRP AOORS TO MESSAGE
0A50 01 D4000C8A         STO  L   MESAG+3
0A52 01 C4000AFB         LD   L   DSW1       DSW RESET WORD
0A54 01 D4000C8B         STO  L   MESAG+4    *TO MESSAGE
0A56 0  4818             BSC      *-         SKIP IF NOT ZERO
0A57 0  7004             MOX      DISP1
                   *
                   *******************************************
0A58 01 44000C48         BSI  L   LOGER      PRINT ERROR 8          SRC
0A5A 0  0002             DC       2          WORO COUNT
0A5B 0  E008             DC       /E008      MESSAGE ID
                   *******************************************
                   *
0A5C 01 C4000AFA   DISP1 LD   L   DSW        CHECK FOR PROPER OSW
0A5E 01 D4000C88         STO  L   MESAG+4    *OSW BIT ON SPV
0A60 01 F4000800         EOR  L   DISW
0A62 0  4818             BSC      *-
0A63 0  7065             MDX      DIE
                   *
                   *******************************************
0A64 01 44000C48         BSI  L   LOGER      GO PRINT ERROR 7       SRC
0A66 0  0002             DC       2          WORO COUNT
0A67 0  E007             DC       /E007
                   *******************************************
                   *
0A68 0  7060             MOX      DIE
                   *
                   *             ** BUILO PROCESS INTRPT **
                   *              ** REQ AND RELEASE CALL **
                   *
0A69 0  6300       DIDPC LOX    3 0          INITIALIZE INDEX
0A6A 01 C7000814         LO   L3 EDIT+2      GET PI EDIT ENTRY
0A6C 01 F4000B04         EOR  L   DISN       CHECK IF TERMINATOR
0A6E 0  4818             BSC      *-         SKIP IF NOT TERM
0A6F 0  7002             MDX      *+2        TERM FOUNO  BRANCH
0A70 0  7301             MOX    3 1          MODIFY INOEX
0A71 0  70F8             MDX      DIDPC+1    CHECK NEXT ENTRY
                   *
0A72 0  680F             STX    3 DI10+1     SAVE INOEX SETTING
0A73 0  6810             STX    3 DI10+3
0A74 0  7303             MDX    3 3          MOOIFY IX TO BUILD
0A75 01 C4000C34         LD   L   RLEXT-3    *PI RELEASE CALL
0A77 01 D7000C19         STO  L3 PIRLO       ADDRS TERM TO RLS CL
0A79 01 C4000C35         LO   L   RLEXT-2    SET BRANCH INSTRUCTN
0A7B 01 D7000C1A         STO  L3 PIRLD+1     *AT ENO OF RELEASE
0A7D 01 C4000C36         LD   L   RLEXT-1    *CALL
0A7F 01 D7000C1B         STO  L3 PIRLD+2
0A81 00 67000000   DI10  LOX  L3 0           RESTORE ORG VALUE
0A83 00 77000000         MDX  L3 0           MODIFY BY ORG VALUE
0A85 0  7304             MDX    3 4
0A86 01 C4000C11         LD   L   RQEXT-3    ADDRESS TERM TO
```

DI DPC FUNCTION TEST

```
0A88 01 D70008DD        STO  L3 PIRQO      *REQUEST CALL                82505440
0A8A 01 C4000C12        LO   L  RQEXT-2    SET BRANCH INSTRUCTN         82505450
0A8C 01 D70008DE        STO  L3 PIRQO+1    *AT END OF REQUEST           82505460
0A8E 01 C4000C13        LD   L  RQEXT-1    *CALL                        82505470
0A90 01 D70008DF        STO  L3 PIRQO+2                                 82505480
                     *                                                  82505490
                     *                ************************          82505500
                     *                RTN01 TEST STG PRTCT VIOLT        82505510
                     *                ************************          82505520
                     *                                                  82505530
0A92 0  C859         RT01 LDO     RI001      ROUTINE NUMBER AND           82505540
0A93 01 DC000800        STD  L RID         *ADDRESS TO PST              82505550
                     *                                                  82505560
                     ************************************************   82505570
0A95 01 440008C2        BSI  L OIRQD       GO REQUEST DI          SRC   82505580
                     ************************************************   82505590
                     *                                                  82505600
0A97 01 74010AFF        MDX  L SPVSW,1     SET STG PROT SW              82505610
                     *                                                  82505620
                     *                ** BUILD DI RD/SN CMMAND**        82505630
                     *                                                  82505640
0A99 0  2C40         01OA DC      /2C40      INSURE IO AREA NOT           82505650
0A9A 1  0AF8            DC        DII        *STORAGE PROTECTED           82505660
0A9B 01 C4000A04        LD   L  OIINT      DI GRP AREA CODE             82505670
0A9D 0  E859            OR        SENSE                                 82505680
0A9E 0  D066            STO       DISN+1     DI GRP SENSE CNMAND          82505690
0A9F 0  8050            A         ONE                                   82505700
0AA0 0  D060            STO       OISW+1                                82505710
0AA1 0  904E            S         ONE                                   82505720
0AA2 0  E053            AND       READ                                  82505730
0AA3 0  E84B            OR        DIREG                                 82505740
0AA4 0  D05E            STD       OIRD+1     DI READ COMMAND              82505750
0AA5 0  C05E            LO        OISN       SET CHECK WORD IN            82505760
0AA6 0  D051            STD       DII        *READ IN AREA                82505770
0AA7 0  2C41            DC        /2C41      STORAGE PROTECT              82505780
0AA8 1  0AF8            DC        DII        *READ IN AREA                82505790
                     *                                                  82505800
                     *                ** CHECK IF OI BUSY **            82505810
                     *                                                  82505820
0AA9 0  0856         DIC  XIO     DISW       SENSE OSW                    82505830
0AAA 0  4804            BSC       E          SKIP IF NOT BUSY             82505840
0AAB 0  7001            MDX       *+1        BUSY                         82505850
0AAC 0  700C            MDX       DIO        NOT BUSY                     82505860
                     *                                                  82505870
                     *                ** DI BUSY  ERROR 3 **            82505880
                     *                                                  82505890
0AAD 01 D4000C88        STO  L MESAG+4     OSW TO MESSAGE               82505900
0AAF 0  C03E            LD        OISRT      REG ADDRS TO MSG             82505910
0AB0 01 D4000C8A        STO  L MESAG+3                                  82505920
                     *                                                  82505930
                     ************************************************   82505940
0AB2 01 44000C48        BSI  L LOGER       GO PRINT ERROR 3       SRC   82505950
0AB4 0  0002            DC        2          WORD COUNT                   82505960
0AB5 0  E003            DC        /E003      MESSAGE IO                   82505970
                     ************************************************   82505980
                     *                                                  82505990
                     ************************************************   82506000
0AB6 01 44000C39        BSI  L RLS         PROGRAM RELEASE        SRC   82506010
                     ************************************************   82506020
                     *                                                  82506030
0AB8 0  70F0            MDX       DIC        TRY AGAIN                    82506040
                     *                                                  82506050
                     *                **VIOLATE PROTECTED STG**         82506060
                     *                                                  82506070
0AB9 0  6302         DID  LDX  3 2          DELAY INDEX                  82506080
0ABA 0  0847            XIO       DIRO       READ DI                      82506090
                     *                                                  82506100
                     ************************************************   82506110
```


DI DPC FUNCTION TEST

```
0ABB 01 44000C39        BSI  L RLS         WAIT FOR INTERRUPT     SRC   82506120
                     ************************************ **********   82506130
                     *                                                  82506140
0ABD 0  73FF            MDX   3 -1                                      82506150
0ABE 0  70FC            MDX      *-4                                    82506160
                     *                                                  82506170
                     *                ** NO SPV INTRP ERROR 1 **        82506180
                     *                                                  82506190
0ABF 0  0840            XID      DISW       SENSE OSW AND SET            82506200
0AC0 01 D4000C8B        STD  L MESAG+4     *IN MESSAGE                  82506210
0AC2 0  C028            LO       DISRT      GRP ADDRS TO MSG             82506220
0AC3 01 D4000C8A        STO  L MESAG+3                                  82506230
                     *                                                  82506240
                     ************************************************   82506250
0AC5 01 44000C48        BSI  L LOGER       GO PRINT ERROR 4       SRC   82506260
0AC7 0  0002            DC       2          WORD COUNT                   82506270
0AC8 0  E001            DC       /E001      MESSAGE ID                   82506280
                     ************************************************   82506290
                     *                                                  82506300
                     *                ** CHECK PROTECTED LOC **         82506310
                     *                ** FOR PROPER DATA     **         82506320
                     *                                                  82506330
0AC9 0  C02E         DIE  LD      DII        CHECK PROTECTED AREA         82506340
0ACA 0  F039            EOR       DISN       * FOR FFFF                   82506350
0ACB 0  4818            BSC       ←          SKIP IF DATA NOT             82506360
0ACC 0  7000            MDX       DIF        * FFFF                       82506370
                     *                                                  82506380
                     *                **STG PRDT AREA READ IN**         82506390
                     *                **       ERROR 5       **         82506400
                     *                                                  82506410
0ACD 0  C020            LD        OISRT      GRP ADDRS TO MSG             82506420
0ACE 01 D4000C8A        STO  L MESAG+3                                  82506430
0AD0 0  C033            LD        DISN       PROTECTED DATA               82506440
0AD1 01 D4000C88        STD  L MESAG+4                                  82506450
0AD3 0  C024            LD        DII        ACTUAL DATA                  82506460
0AD4 01 D4000C8C        STO  L MESAG+5                                  82506470
                     *                                                  82506480
                     ************************************************   82506490
0AD6 01 44000C48        BSI  L LOGER       GO PRINT ERROR 5       SRC   82506500
0AD8 0  0003            DC       3          WORD COUNT                   82506510
0AD9 0  E005            DC       /E005      MESSAGE ID                   82506520
                     ************************************************   82506530
                     *                                                  82506540
0ADA 0  1010         DIF  SLA     16         CLEAR SPV SWITCH             82506550
0ADB 0  D023            STO       SPVSW                                 82506560
0ADC 0  2C40            DC        /2C40      CLEAR STORAG PROTECT         82506570
0ADD 1  0AF8            DC        DII                                     82506580
                     *                                                  82506590
                     ************************************************M***82506600
0ADE 01 44000802        BSI  L OIRLO       GO RELEASE DI          SRC   82506610
0AE0 01 44000C39        BSI  L RLS         OVERLAP RELEASE        SRC   82506620
                     ************************************************   82506630
                     *                                                  82506640
0AE2 01 C4000802        LD   L SWO         CHECK IF TERMINATE           82506650
0AE4 00 4C84012E        BSC  I END,E       *PROGRAM REQUESTED           82506660
0AE6 01 C4000803        LD   L SW1         CHECK SWITCH FUNCTIN         82506670
0AE8 0  4804            BSC       E          *OI  IF BIT 15 ON            82506680
0AE9 0  70A8            MDX       RT01       *LOOP ROUTINE 1  IF          82506690
0AEA 0  701F            MDX       RT02       *OFF GO TO ROUTINE 2         82506700
                     *                                                  82506710
0AEC    0000            BSS  E 0                                        82506720
0AEC 0  0001         RID01 DC      1          RID                          82506730
0AED 1  0A92            DC        RT01       RAD                          82506740
                     *                                                  82506750
                     *                ****************                  82506760
                     *                PROGRAM CONSTANTS                 82506770
                     *                ****************                  82506780
                     *                                                  82506790
```

DI OPC FUNCTION TEST

```
OAEE 0  0040        DISRT DC      /0040      STARTING DI GRP AORS       82506800
OAEF 0  0000        DIREG DC      0          DI GRP BEING USEO          82506810
OAF0 0  0001        DNE   DC      1                                     82506820
OAF1 0  0000        RDSW  DC      0          1ST READ SWITCH            82506830
OAF2 0  0000        DICMP DC      0          DI GRP COMPARE WDRO        82506840
OAF3 0  0000        PI1   DC      0          PISW REAO IN AR+A          82506850
OAF4 0  0000        PI2   DC      0          PISW RESET CK HOLD         82506860
OAF5 0  0000        ADDRS DC      0          PISW ADDRESS HOLO          82506870
OAF6 0  FAFF        READ  OC      /FAFF      BUILD READ IOCC CNST       82506880
OAF7 0  0700        SENSE DC      /0700      SENSE COMMANO              82506890
OAF8 0  0000        DI1   DC      0          DI GRP REAO IN AREA        82506900
OAF9 0  0000        DI2   DC      0          DI GRP SENSE SAVE          82506910
OAFA 0  0000        DSW   DC      0          DSW HDLD LOCATION          82506920
OAFB 0  0000        DSW1  DC      0          DSW RESET WORO             82506930
OAFC 0  0000        INT   DC      0          INTERRUPT INDICATOR        82506940
OAFD 0  0000        DIRQ  DC      0          DI REQUEST SAVE            82506950
OAFE 0  0000        RDSN  DC      0                                     82506960
OAFF 0  0000        SPVSW DC      0          STG PROTECT SWITCH         82506970
0B00    0000              BSS   E 0                                     82506980
0B00 0  4000        DISW  DC      /4000      SENSE DSW IOCC             82506990
0B01 0  0000              DC      0                                     82507000
0B02 1  OAF8        DIRD  OC      DI1        DI READ IOCC               82507010
0B03 0  0000              DC      0                                     82507020
0B04 0  FFFF        DISN  DC      /FFFF      OI SENSE IOCC              82507030
0B05 0  0000              DC      0                                     82507040
0B06 1  OAF3        FIRO  DC      PI1        PI READ IOCC               82507050
0B07 0  0000              DC      0                                     82507060
0B08 0  0000        PISN  DC      0          PI SENSE IOCC              82507070
0B09 0  0000              DC      0                                     82507080
                    *                                                   82507090
                    *                  *************************        82507100
                    *                  RTNO2  CK DI GRP ANO PI          82507110
                    *                  INTERRUPT  ROUTINE 2 LO??S       82507120
                    *                  UNTIL PROGRAM DESELECT           82507130
                    *                  *************************        82507140
                    *                                                   82507150
0B0A 01 CC000BC0    RT02  LDD   L RID02      ROUTINE NUMBER AND         62507160
0B0C 01 DC000800          STD   L RID        *ADDRESS TO PST            82507170
0B0E 01 74010AF1          MDX   L RDSW,1     SET FIRST READ INOTR       82507180
                    *                                                   82507190
                    ******************************************          82507200
0B10 01 440008C2    DI01  BSI   L DIRQO      GO REQUEST OI         SRC  82507210
0B12 01 C4000814          LD    L EDIT+2     BYPASS REQUEST PI IF       82507220
0B14 0  F0EF              EOR     DISN       *1ST PI EDIT ENTRY         82507230
0B15 01 4C180B19          BSC   L DI02,+-    *IS FFFF                   82507240
0B17 01 44000BDD          BSI   L PIRQO      GO REQUEST PI         SRC  82507250
                    ******************************************          82507260
                    *                                                   82507270
                    *                  ** BUILD RD AND SN CMNOS**       82507280
                    *                                                   82507290
0B19 01 C4000A04    DI02  LD    L DIINT      GET OI AREA CODE           82507300
0B1B 0  EB03              OR      DIREG      ADD PRESENT DI AODRS       82507310
0B1C 0  EBDA              OR      SENSE                                 82507320
0B1D 0  D0E7              STD     DISN+1     DI GRP SENSE               82507330
0B1E 0  E007              AND     REAO                                  82507340
0B1F 0  D0E3              STD     DIRO+1     O' GRP READ                82507350
                    *                                                   82507360
                    *                  ** READ ANO SENSE OI GRP**       82507370
                    *                                                   82507380
0B20 0  08E1        DI03  XIO     DIRO       REAO THE DI GROUP          82507390
0B21 0  08E2              XIO     OISN       SENSE OI GROUP             82507400
0B22 0  0006              STO     OI2        SAVE SENSE OATA            82507410
0B23 0  C0CD              LD      RDSW       CHECK IF 1ST REAO          82507420
0B24 0  48C8              BSC     +          SKIP IF 1ST READ           82507430
0B25 0  700E              MOX     DI04       BRANCH IF NDT 1ST RO       62507440
                    *                                                   82507450
                    *                  ** 1ST READ THIS OI GRP **       82507460
                    *                                                   82507470
```


DI DPC FUNCTION TEST

```
0B26 0  C0D1              LD      DI1        SAVE DATA READ AS          82507480
0B27 0  D0CA              STD     OICMP      *COMPARE WORD              82507490
0B28 01 D4000C8B          STD   L MESAG+4    SET DATA IN MESSAGE        82507500
0B2A 0  C0C4              LD      OIREG      SET DI GRP AODRESS         82507510
0B2B 01 D4000C8A          STO   L MESAG+3    *IN MESSAGE                82507520
                    *                                                   82507530
                    ******************************************          82507540
0B2D 01 44000C4E          BSI   L LOGDT      LDG 1ST READ DATA     SRC  82507550
0B2F 0  0002              DC      /0002      LINE NMBR + WDKO CNT       82507560
0B30 0  D001              DC      /D001      MESSAGE ID                 82507570
                    ******************************************          82507580
                    *                                                   82507590
0B31 0  1010              SLA     16         CLEAR 1ST READ             82507600
0B32 0  D0BE              STD     RDSW       *INDICATOR AND CONT        82507610
0B33 0  7012              MDX     DI05                                  82507620
                    *                                                   82507630
                    *                  ** NOT 1ST REAO THIS GRP**       82507640
                    *                                                   82507650
0B34 0  C0C3        DI04  LD      DI1        CHECK PRESENT DATA         82507660
0B35 0  F0BC              EOR     DICMP      *ACAINST COMP WDRD         82507670
0B36 0  4818              BSC     +-         SKIP IF NO COMPARE         82507680
0B37 0  700E              MDX     0105       BRANCH IF COMPARE          82507690
                    *                                                   82507700
0B38 0  C089              LO      DICMP      SET COMPARE WORD IN        82507710
0B39 01 04000C8B          STD   L MESAG+4    *LOG MESSAGE               82507720
0B3B 0  C0BC              LD      DI1        SET PRESENT REAO           82507730
0B3C 01 D4000C8C          STO   L MESAG+5    *DATA IN LOG MESSAGE       82507740
0B3E 0  D0B3              STO     DICMP      *AND IN COMPARE WORO       82507750
0B3F 0  C0AF              LD      DIREG      SET DI GRP ADDRESS         82507760
0B40 01 D4000C8A          STO   L MESAG+3    *IN MESSAGE                82507770
                    *                                                   82507780
                    ******************************************          82507790
0B42 01 44000C4E          BSI   L LOGDT      LOG NCN CMPAR DATA    SRC  82507800
0B44 0  0003              DC      /0003      LINE NMBR + WORO CNT       82507810
0B45 0  D002              DC      /D002      MESSAGE ID                 82507820
                    ******************************************          82507830
                    *                                                   82507840
                    *                  ** CK FDR RD SNS CMPR **         82507850
                    *                                                   82507860
0B46 0  C0B1        0105  LD      DI1        CHECK REAO ANO SENSE       82507870
0B47 0  F0B1              EOR     DI2        *DATA                      82507880
0B48 0  4818              BSC     +-         SKIP IF UNLIKE             82507890
0B49 0  700D              MDX     0106       BRANCH IF ALIKE            82507900
                    *                                                   82507910
                    *                  ** RD SNS CMPR ERROR **          82507920
                    *                                                   82507930
0B4A 0  C0A0              LD      OI1                                   82507940
0B4B 01 04000C8B          STO   L MESAG+4    READ OATA TO MSG           82507950
0B4D 0  C0A8              LD      OI2                                   82507960
0B4E 01 D4000C8C          STO   L MESAG+5    SENSE DATA TO MSG          82507970
0B50 0  C09E              LD      DIREG                                 82507980
0B51 01 D4000CBA          STO   L MESAG+3    OI GRP ADRS TO MSG         82507990
                    *                                                   82508000
                    ******************************************          82508010
0B53 01 44000C48          BSI   L LOGER      LOG RD SNS ERROR      SRC  82508020
0B55 0  0003              DC      /0003      LINE NMBR + WDRD CNT       82508030
0B56 0  E002              DC      /E002      MESSAGE IO                 82508040
                    ******************************************          82508050
                    *                                                   82508060
                    ******************************************          82508070
0B57 01 44000B02    DI06  BSI   L OIRLD      GD RELEASE DI         SRC  82508080
0B59 01 44000C39          BSI   L RLS        OVERLAP RELEASE       SRC  82508090
0B5B 01 44000BC2          BSI   '. DIRQD     GO REQUEST DI         SRC  82508100
                    ******************************************          82508110
                    *                                                   82508120
0B5D 0  C09E              LO      INT        CK IF INTRP OCCURED        82508130
0B5E 0  4818              BSC     +-         SKIP IF INTRP              82508140
0B5F 0  702E              MDX     DI08       BRANCH ON NO INTRP         82508150
```

DI DPC FUNCTION TEST

```
                       *
                       *                    ** CHECK PROCESS INTRPT **
                       *
0B60 0  1010                 SLA      16        CLEAR INTRPT INDICTR
0B61 0  D09A                 STO      INT
0B62 01 C4000AFE             LD    L  RDSN      SET READ SENSE INDTR
0B64 01 D4000C8C             STO   L  MESAG+5   *IN PRINT MESSAGE
0B66 0  6130                 LDX    1 48
0B67 01 CD0009D2             LDD   L1 PITBL-2   GET TABLE ENTRY
0B69 0  4820                 BSC      Z         SKIP IF ENTRY ZERO
0B6A 0  7D03                 MDX      *+3       BRANCH NOT ZERO
0B6B 0  71FE           DI06A MDX    1 -2        MODIFY TABLE INDEX
0B6C 0  70FA                 MDX      *-6       GO GET NEXT ENTRY
0B6D 0  7000                 MDX      DI07      GO CHECK PISW RESET
                       *
                       *                    **LOG PISW CONTENTS**
                       *
0B6E 01 D4000C8A             STO   L  MESAG+3   PISW ADDRS TO MESAGE
0B70 0  1090                 SLT      16        Q REG TO A REG
0B71 01 D4000C8B             STD   L  MESAG+4   PISW DATA TO MESSAGE
0B73 0  10A0                 SLT      32        CLEAR USED TABLE
0B74 01 DD0009D2             STO   L1 PITBL-2   *ENTRY
                       *
                       ***********************************************
0B76 01 44000C4E             BSI   L  LOGOT     PRINT MESSAGE D003   SRC
0B78 0  0003                 DC       /0003     WORD COUNT
0B79 0  D003                 DC       /D003     MESSAGE ID
                       ***********************************************
                       *
0B7A 0  7DFD                 MDX      DI06A     CK IF TBL SEARCH DUN
                       *
                       *                    ** CHECK PISW RESET
                       *
0B7B 01 C4000AF4       DI07  LD    L  PI2       CHECK IF PISW RESET
0B7D 0  4818                 BSC      +-        SKIP IF RESET FAILED
0B7E 0  700F                 MDX      DI08
0B7F 01 D4000C8B             STD   L  MESAG+4   SET PISW IN MESSAGE
0B81 01 C4000AF5             LD    L  ADDRS
0B83 01 D4000C8A             STD   L  MESAG+3   SET ADDRESS IN MESAG
0B85 0  1010                 SLA      16        CLEAR ERROR SAVE
0B86 01 D400DAF4             STO   L  PI2       *LOCATIONS
0B8B 01 D400DAF5             STD   L  ADDRS
                       *                    ** PROCESS INT RESET ERR**
                       *
                       ***********************************************
0B8A 01 44000C48             BSI   L  LOGER     LOG PISW RESET ERROR SRC
0B8C 0  0002                 DC       /0002     LINE NMBR + WORD CNT
0B8D 0  E004                 DC       /E004     MESSAGE ID
                       ***********************************************
                       *
                       *                    ** CHECK IF OPERATOR HAS**
                       *                    ** REQSTD A DI GRP CHNG **
                       *
0B8E 01 C4000802       DI08  LD    L  SW0       CHECK IF TERMINATE
0B90 00 4C84012E             BSC   I  END,E     *PROGRAM REQUESTED
0B92 01 C4000804             LD    L  SW2       GET FUNCN 2 SETTING
0B94 0  4818                 BSC      +-        *SKIP IF NOT ZERO
0B95 0  708A                 MDX      DI03      NO REQUEST CONTINUE
                       *
                       *                    ** GRP CHANGE REQUESTED **
                       *
0B96 0  189D                 SRT      16
0B97 0  1010                 SLA      16
0B98 01 D4000804             STO   L  SW2       CLR FUNC 2 LOCATION
0B9A 0  1088                 SLT      8         SAVE DI GRP REQUEST
0B9B 01 D400AFD              STO   L  DIRQ      *POSITIONS
0B9D 0  1010                 SLA      16
0B9E 0  1088                 SLT      8         GET BIT 15
```


DI DPC FUNCTION TEST

```
0B9F 0  4808                 BSC      +         SKIP IF BIT 15 ON
0BA0 0  701C                 MDX      DI09      BRANCH IF BIT 15 OFF
                       *
                       *                    ** CHANGE DI GRP **
                       *
0BA1 01 C4000AF0             LD    L  DIRQ      GET GRP REQUEST
0BA3 0  4818                 BSC      +-        SKIP IF NOT = ZERO
0BA4 0  7D03                 MDX      *+3       CONTENTS ZERO BRANCH
0BA5 01 D4000AEF             STO   L  DIREG     REQ TO GRP IN USE ID
0BA7 0  7002                 MDX      *+2
0BAB 01 74010AEF             MDX   L  DIREG,1   ADD 1 TO GRP IN USE
0BAA 01 C4000AEE             LD    L  DISRT     CHECK IF GRP REQUEST
0BAC 01 94000AEF             S     L  DIREG     *ADDRESS LESS THAN
0BAE 0  4808                 BSC      +         *0040
0BAF 0  7001                 MDX      *+1
0BB0 0  7006                 MDX      *+6       GRP ADDRES TOO SMALL
0BB1 01 C4000813             LD    L  EDIT+1    GET MAX ADDRESS AND
0BB3 01 94000AEF             S     L  DIREG     *CHECK IF NEW SEL IS
0BB5 0  4810                 BSC      -         *GREATER  IF SO SKIP
0BB6 0  7D04                 MDX      *+4       NEW SELECTION OK
0BB7 01 C4000AEE             LD    L  DISRT     RESET GRP ADDRESS
0BB9 01 D4000AEF             STO   L  DIREG     *TO /0040
0BBB 01 74010AF1             MDX   L  RDSW,1    SET 1ST RD THIS REG
                       *
0BBD 01 4C000B19       DI09  BSC   L  DID2      CONTINUE
                       *
0BC0    0000                 BSS   E  0
0BC0 0  0002           RID02 DC       2         RID
0BC1 1  080A                 DC       RT02      RAD
                       *
                       *                    *************************
                       *                    DI REQUEST DEVICE ROUTINE
                       *                    *************************
                       *
0BC2 0  0000           DIRQD DC       0                              SE
0BC3 01 C4000812             LD    L  EDIT      REQUEST DEVICE IF IT
0BC5 0  4828                 BSC      +Z        *IS NOT PRESENTLY
0BC6 0  7006                 MDX      *+6       *ASSIGNED TO PROGRAM
                       *
                       ***********************************************
0BC7 00 44800131             BSI   I  REQDV     GO REQUEST DEVICE    MRC
0BC9 1  0BCF                 DC       DIBSY     BUSY RETURN
0BCA 1  0812                 DC       EDIT      DI DDEF
0BCB 1  DA04                 DC       DIINT     ASSIGNMENT ADDRESS
0BCC 1  0808                 DC       TERM
                       ***********************************************
                       *
0BCD 01 4C8008C2             BSC   I  DIRQD     RETURN TO USER       SX
                       *
                       ***********************************************
0BCF 01 44000C39       DIBSY BSI   L  RLS       BUSY  EXIT TO MON    SRC
                       ***********************************************
                       *
0BD1 0  7DF1                 MDX      DIRQD+1   TRY AGAIN
                       *
                       *                    *************************
                       *                    DI RELEASE DEVICE ROUTINE
                       *                    *************************
                       *
0BD2 0  0000           DIRLD DC       0                              SE
0BD3 01 C4000812             LD    L  EDIT      RELEASE DEVICE IF IT
0BD5 0  4810                 BSC      -         *IS PRESENTLY HELD
0BD6 0  7D04                 MDX      *+4       BY THE DI PROGRAM
                       *
                       ***********************************************
0BD7 00 44800132             BSI   I  RELDV     GO RELEASE DEVICE    MRC
0BD9 1  0812                 DC       EDIT      DI DDEF
0BDA 1  0808                 DC       TERM
```

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                        ********************************************          82509520
                        *                                                    82509530
08D8 01 4C800BD2              BSC  I  DIRLD     RETURN TO USER        SX     82509540
                        *                                                    82509550
                        *                 *************************          82509560
                        *                 PI REQUEST DEVICE ROUTINE          82509570
                        *                 *************************          82509580
                        *                                                    82509590
08DD 0  0000            PIRQD DC        0                             SE     82509600
                        *                                                    82509610
                        ********************************************          82509620
08DE 00 44800131              BSI  I  REQDV     REQUEST PROC. INTRP   MRC    82509630
08E0 1  0C16                  DC      PIBSY     BUSY RETURN                  82509640
08E1 1  0814                  DC      EDIT+2    DDEF 1                       82509650
08E2 1  082D                  DC      DVA00                                  82509660
08E3 1  0815                  DC      EDIT+3    DDEF 2                       82509670
08E4 1  083C                  DC      DVA01                                  82509680
08E5 1  0816                  DC      EDIT+4    DDEF 3                       82509690
08E6 1  0848                  DC      DVA02                                  82509700
08E7 1  0817                  DC      EDIT+5    DDEF 4                       82509710
08E8 1  085A                  DC      DVA03                                  82509720
08E9 1  0818                  DC      EDIT+6    DDEF 5                       82509730
08EA 1  0869                  DC      DVA04                                  82509740
08EB 1  0819                  DC      EDIT+7    DDEF 6                       82509750
08EC 1  0878                  DC      DVA05                                  82509760
08ED 1  081A                  DC      EDIT+8    DDEF 7                       82509770
08EE 1  0887                  DC      DVA06                                  82509780
08EF 1  081B                  DC      EDIT+9    DDEF 8                       82509790
08F0 1  0896                  DC      DVA07                                  82509800
08F1 1  081C                  DC      EDIT+10   DDEF 9                       82509810
08F2 1  08A5                  DC      DVA08                                  82509820
08F3 1  081D                  DC      EDIT+11   DDEF 10                      82509830
08F4 1  0884                  DC      DVA09                                  82509840
08F5 1  081E                  DC      EDIT+12   DDEF 11                      82509850
08F6 1  D8C3                  DC      DVA10                                  8250986D
08F7 1  081F                  DC      EDIT+13   DDEF 12                      82509870
08F8 1  08D2                  DC      DVA11                                  82509880
08F9 1  0820                  DC      EDIT+14   DDEF 13                      82509890
08FA 1  08E1                  DC      DVA12                                  82509900
08F8 1  0821                  DC      EDIT+15   DDEF 14                      82509910
08FC 1  08F0                  DC      DVA13                                  82509920
08FD 1  0822                  DC      EDIT+16   DDEF 15                      82509930
08FE 1  08FF                  DC      DVA14                                  82509940
08FF 1  0823                  DC      EDIT+17   DDEF 16                      82509950
0C00 1  090E                  DC      DVA15                                  82509960
0C01 1  0824                  DC      EDIT+18   DDEF 17                      82509970
0C02 1  091D                  DC      DVA16                                  82509980
0C03 1  0825                  DC      EDIT+19   DDEF 18                      82509990
0C04 1  D92C                  DC      DVA17                                  82510000
0C05 1  0826                  DC      EDIT+20   DDEF 19                      82510010
0C06 1  0938                  DC      DVA18                                  82510020
0CD7 1  0827                  DC      EDIT+21   DDEF 20                      82510030
0C08 1  094A                  DC      DVA19                                  82510040
0C09 1  0828                  DC      EDIT+22   DDEF 21                      82510050
0C0A 1  0959                  DC      DVA20                                  82510060
0C0B 1  0829                  DC      EDIT+23   DDEF 22                      82510070
0C0C 1  0968                  DC      DVA21                                  82510080
0C0D 1  082A                  DC      EDIT+24   DOEF 23                      82510090
0C0E 1  0977                  DC      DVA22                                  82510100
0C0F 1  082B                  DC      EDIT+25   DDEF 24                      82510110
0C1D 1  0986                  DC      DVA23                                  8251D120
0C11 1  D80B                  DC      TERM                                   82510130
                        ********************************************          82510140
                        *                                                    82510150
0C12 01 4C000C14              BSC  L  RQEXT                                  82510160
                        *                                                    82510170
0C14 01 4C8008DD        RQEXT BSC  I  PIRQD     RETURN TO USER        SX     82510180
                        *                                                    82510190
```



```
                        ********************************************          82510200
0C16 01 44000C39        PIBSY BSI  L  RLS         BUSY  EXIT TO MDN   SRC    82510210
                        ********************************************          82510220
                        *                                                    82510230
0C18 0  70C5                  MDX      PIRQD+1    TRY AGAIN                  82510240
                        *                                                    82510250
                        *                 *************************          82510260
                        *                 PI RELEASE DEVICE ROUTINE          82510270
                        *                 *************************          82510280
0C19 0  D000            PIRLD DC        0                             SE     82510290
                        *                                                    82510300
                        ********************************************          82510310
0C1A 00 44800132              BSI  I  RELDV     RELEASE PROC. INTRP   MRC    82510320
0C1C 1  0814                  DC      EDIT+2    DDEF 1                       82510330
0C1D 1  0815                  DC      EDIT+3    DDEF 2                       82510340
0C1E 1  0816                  DC      EDIT+4    DDEF 3                       82510350
0C1F 1  0817                  DC      EDIT+5    DDEF 4                       82510360
0C20 1  0818                  DC      EDIT+6    DDEF 5                       82510370
0C21 1  D819                  DC      EDIT+7    DDEF 6                       82510380
0C22 1  081A                  DC      EDIT+8    DDEF 7                       82510390
0C23 1  D81B                  DC      EDIT+9    DDEF 8                       82510400
0C24 1  081C                  DC      EDIT+10   DDEF 9                       82510410
0C25 1  081D                  DC      EDIT+11   DDEF 10                      82510420
0C26 1  081E                  DC      EDIT+12   DDEF 11                      82510430
0C27 1  081F                  DC      EDIT+13   DDEF 12                      82510440
0C28 1  0820                  DC      EDIT+14   DDEF 13                      82510450
0C29 1  0821                  DC      EDIT+15   DDEF 14                      82510460
0C2A 1  0822                  DC      EDIT+16   DDEF 15                      82510470
0C2B 1  0823                  DC      EDIT+17   DDEF 16                      82510480
0C2C 1  0824                  DC      EDIT+18   DDEF 17                      82510490
0C2D 1  0825                  DC      EDIT+19   DDEF 18                      82510500
0C2E 1  0826                  DC      EDIT+20   DOEF 19                      82510510
0C2F 1  0827                  DC      EDIT+21   DDEF 20                      82510520
0C30 1  0828                  DC      EDIT+22   DDEF 21                      82510530
0C31 1  0829                  DC      EDIT+23   DDEF 22                      82510540
0C32 1  082A                  DC      EDIT+24   DDEF 23                      82510550
0C33 1  082B                  DC      EDIT+25   DDEF 24                      82510560
0C34 1  0808                  DC      TERM                                   82510570
                        ********************************************          82510580
                        *                                                    82510590
0C35 D1 4C000C37              BSC  L  RLEXT                                  8251D600
                        *                                                    8251D610
0C37 01 4C800C19        RLEXT BSC  1  PIRLD       RETURN TO USER        SX     8251D620
                        *                                                    82510630
                        *                                                    82510640
                        *                 *************************          82510650
                        *                 ** RELEASE TO MONITOR RTN**        82510660
                        *                 *************************          82510670
                        *                                                    82510680
0C39 0  D0C0            RLS   DC        0                             SE     82510690
0C3A 0  69C8                  STX    1  RLS1+1     SAVE INDEX 1               82510700
0C3B 0  6BC9                  STX    3  RLS1+3     SAVE INDEX 3               82510710
0C3C 01 67C00C42              LDX    L3 RLS1                                 82510720
0C3E 01 6FC0080A              STX    L3 MLSCF+1    SET RETURN ADDRESS        82510730
                        *                                                    8251D740
                        ********************************************          82510750
0C40 00 4C80012D              BSC  I  START     EXIT TO MONITOR       MRC    82510760
                        ********************************************          82510770
                        *                                                    82510780
0C42 00 65000000        RLS1  LDX  L1 0                                      82510790
0C44 00 67000000              LDX  L3 0                                      82510800
0C46 D1 4C800C39              BSC  I  RLS                             SX     82510810
                        *                                                    82510820
                        *                 ***********************          82510830
                        *                 ERROR AND LOG ROUTINES             8251C840
                        *                 ***********************          82510850
                        *                                                    82510860
0C4C 0  0000            LDGER DC        0         ERROR ENTRY POINT   SE     82510870
```

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0C49 01 74010C74          MDX  L  ERCAL,1     SET ERR CALL INDICTR        82510880
0C4B 0  C0FC              LD       LDGER      SET ERROR CALL STRNG        82510890
0C4C 0  D001              STO      LOGOT      *ADDRESS INTO LOG           82510900
0C4D 0  7001              MDX      LDGDT+1    *ENTRY AND GO TO LDG        82510910
                     *                                                    82510920
0C4E 0  0000         LOGDT DC      0          LOG ENTRY POINT      SE     82510930
0C4F 0  4082              BSI      DIRLD      RELEASE DI           SRC    82510940
0C50 01 C4800C4E          LD   I   LOGDT      WORD COUNT TO MESSAGE       82510950
0C52 0  D034              STO      MESAG      *TABLE                      82510960
0C53 01 74010C4E          MDX  L   LDGDT,1                               82510970
0C55 01 C4800C4E          LD   I   LOGOT      MESSAGE ID TO MESSAGE       82510980
0C57 0  D031              STO      MESAG+2    *TABLE                      82510990
0C58 0  C01B              LD       ERCAL                                  82511000
0C59 0  4818              BSC      ←          SKIP IF ERROR CALL          82511010
0C5A 0  701A              MDX      LOG01      BRANCH IF LOG CALL          82511020
                     *                                                    82511030
                     ********************************************         82511040
0C5B 00 44800130     LOGE1 BSI  I  ERROR      GO PRINT ERROR       MRC    82511050
0C5D 1  0C87              DC       MESAG      MESSAGE TABLE ADDRS         82511060
0C5E 1  0C72              DC       ERBSY      BUSY RETURN                 82511070
0C5F 1  0C61              DC       LOGE2      LOOP ERROR ADDRESS          82511080
                     ********************************************         82511090
                     *                                                    82511100
0C60 0  7009              MDX      *+9        SKIP LOOP ERROR             82511110
                     *                                                    82511120
0C61 0  1010         LOGE2 SLA      16         CLEAR ERRER CALL            82511130
0C62 0  D011              STD      ERCAL      *INDICATOR                  82511140
0C63 01 44000BC2          BSI  L   DIRQD      REQUEST DI           SRC    82511150
0C65 01 C4000AFF          LD   L   SPVSW      CHECK IF ROUTINE 1          82511160
0C67 01 4C200A99          BSC  L   OIOA,Z     LOOP ON SPV PASS ERR        82511170
0C69 0  7004              MDX      *+4        SKIP 2ND REQUEST DI         82511180
0C6A 01 44000BC2          BSI  L   DIRQD      REQUEST DI           SRC    82511190
0C6C 0  1010              SLA      16         CLEAR ERROR CALL            82511200
0C6D 0  D006              STD      ERCAL      *INDICATOR *                82511210
0C6F 01 74020C48          MDX  L   LOGER,2                               82511220
0C70 01 4C800C48          BSC  I   LOGER      RETURN TO USER       SX     82511230
                     *                                                    82511240
                     *              ** ERROR ROUTINE BUSY **              82511250
                     *                                                    82511260
                     ********************************************         82511270
0C72 0  40C6         ERBSY BSI      RLS        BUSY EXIT            SRC    82511280
                     ********************************************         82511290
                     *                                                    82511300
0C73 0  70E7              MDX      LOGE1                                  82511310
                     *                                                    82511320
0C74 0  0000         ERCAL DC       0          ERROR CALL INDICATOR        82511330
                     *                                                    82511340
                     *                                                    82511350
                     *                ** LOG CALL **                      82511360
                     *                                                    82511370
0C75 01 C4000802     LOGD1 LD   L   SWO        CHECK BYPASS LOG            82511380
0C77 0  100D              SLA      13                                     82511390
0C78 0  4828              BSC      +Z         SKIP IF LOG                 82511400
0C79 0  7005              MDX      LOGO2+5    BRANCH ON BYPASS LOG        82511410
                     *                                                    82511420
                     ********************************************         82511430
0C7A 00 4480012F     LOGD2 BSI  I   LOG        GO PRINT DATA        MRC    82511440
0C7C 1  0C87              DC       MESAG      MESSAGE TABLE ADDRS         82511450
0C7D 1  0C85              DC       LGBSY      BUSY RETURN                 82511460
0C7E 0  0000              DC       /0000      TERMINATION ADDRESS         82511470
                     ********************************************         82511480
                     *                                                    82511490
0C7F 01 44000BC2          BSI  L   DIRQD      REQUEST DI           SRC    82511500
0C81 01 74010C4E          MDX  L   LOGOT,1    RETURN TO USER              82511510
0C83 01 4C800C4E          BSC  I   LOGDT                          SX     82511520
                     *                                                    82511530
                     *                ** LOG BUSY **                      82511540
                     *                                                    82511550
```



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                     ********************************************         82511560
0C85 0  40B3         LGBSY BSI      RLS        BUSY EXIT            SRC    82511570
                     ********************************************         82511580
                     *                                                    82511590
0C86 0  70F3              MDX      LOGD2                                  82511600
                     *                                                    82511610
                     *                ** MESSAGE TABLE **                 82511620
                     *                                                    82511630
0C87 0  0000         MESAG DC       0          LINE NMBR + WD COUNT        82511640
0C88 0  0000               DC       0          HEX DEC SW                  82511650
0C89 0  0000               DC       0          MESSAGE ID                  82511660
0C8A 0  0000               DC       0          MOD 1                       82511670
0C8B 0  0000               DC       0          MOD 2                       82511680
0C8C 0  0000               DC       0          MOD 3                       82511690
0C8D 0  0000               DC       0          MOD 4                       82511700
                     *                                                    82511710
                     *                ***********                         82511720
                     *                END ROUTINE                         82511730
                     *                ***********                         82511740
                     *                                                    82511750
0C8E 0  0000         DIEND DC       0                               SE     82511760
                     *                                                    82511770
0C8F 0  2C40               DC       /2C40      CLEAR STORAGE PRDTCT        82511780
0C90 1  0AF8               DC       DI1        *BIT                        82511790
                     *                                                    82511800
                     ********************************************         82511810
0C91 01 44000BD2          BSI  L   DIRLD      RELEASE DI           SRC    82511820
                     ********************************************         82511830
                     *                                                    82511840
0C93 01 C4000814          LD   L   EDIT+2     BYPASS RELEASE PI           82511850
0C95 01 F4000B04          EOR  L   DISN       *IF 1ST  PI EDIT            82511860
0C97 0  4818              BSC      ←          *ENTRY IS FFFF              82511870
0C98 0  7002              MDX      *+2                                    82511880
                     *                                                    82511890
                     ********************************************         82511900
0C99 01 44000C19          BSI  L   PIRLD      GO RELEASE PI        SRC    82511910
                     ********************************************         82511920
                     *                                                    82511930
0C9B 01 4C800C8E          BSC  I   DIEND      RETURN TO USER       SX     82511940
                     *                                                    82511950
0C9D     0000        PEND  BSS      0          END PROGRAM ARRDESS         82511960
0C9E     0A1A              END      DIBGN                                  82511970
```

CROSS REFERENCE LISTING

SYMBOL	VALUE	REFERENCES
A	09A5	0998
ADDRS	0AF5	09CB,0881,0B88
B	09AB	0999
BEGIN	012C	07FF,0A1A
CRCK	0133	
DIBGN	0A1A	0C9D
DIBSY	0BCF	0BC9
DIC	0AA9	0A88
DICMP	0AF2	0827,0835,0B3B,083E
DID	0AB9	0AAC
DIDPC	0A69	0807,0A71
DIE	0AC9	0A63,0A68
DIEND	0CBE	0B08,0C9B
DIER	0A32	0A11
DIER1	0A40	0A38
DIF	0ADA	0ACC
DIINT	0A04	0A18,0A98,0B19,0BC8
DIN1	0A14	0A10
DIN2	0A18	
DIRD	0802	0AA4,0ABA,081F,0820
DIREG	0AEF	0A20,0A32,0AA3,0818,0B2A,083F,0B50,0BA5,0BA8,0BAC, 0BB3,0BB9
DIRLD	0BD2	0ADE,0B57,0BDB,0C4F,0C91
DIRQ	0AFD	0898,08A1
DIRQD	08C2	0A95,0B10,0B5B,08CD,0BD1,0C63,0C6A,0C7F
DISN	0804	0A6C,0A9E,0AA5,0ACA,0A00,0B14,0B10,0B21,0C95
DISPV	0A4E	0A14
DISP1	0A5C	0A57
DISRT	0AEE	0A1E,0A4E,0AAF,0AC2,0ACD,0BAA,0B87
DISW	0B00	0A06,0A0A,0A60,0AA0,0AA9,0ABF
DIOA	0A99	0C67
DIO1	0B10	
DIO2	0B19	0B15,0BBD
DIO3	0B20	0B95
DIO4	0B34	0B25
DIO5	0B46	0B33,0B37
DIO6	0B57	0A4C,0849
DIO6A	0B6B	0B7A
DIO7	0B7B	0B6D
DIO8	0B8E	0B5F,0B7E
DIO9	0B8D	0BA0
DI1	0AF8	0A2B,0A44,0A9A,0AA6,0AA8,0AC9,0A03,0ADD,0802,0826, 0834,0838,0846,084A,0C90
DI10	0A31	0A72,0A73
DI2	0AF9	0B22,0B47,0B4D
DSW	0AFA	0AD8,0A40,0A5C
DSW1	0AFB	0A0C,0A36,0A52
DVA00	082D	0835,0839,0BE2
DVA01	083C	0B44,0848,0BE4
DVA02	0848	0853,0857,0BE6
DVA03	085A	0862,0866,0BE8
DVA04	0869	0871,0875,0BEA
DVA05	0878	0880,0884,0BEC
DVA06	0887	088F,0893,0BEE
DVA07	0896	089E,08A2,0BF0
DVA08	08A5	08AD,08B1,0BF2
DVA09	08B4	08BC,08C0,0BF4
DVA10	08C3	08CB,08CF,0BF6
DVA11	0802	0BDA,08DE,0BF8
DVA12	08E1	08E9,08ED,0BFA
DVA13	08F0	08F8,08FC,0BFC
DVA14	08FF	0907,090B,08FE
DVA15	090E	0916,091A,0C00
DVA16	091D	0925,0929,0C02
DVA17	092C	0934,0938,0C04

DVA18	093B	0943,0947,0C06
DVA19	094A	0952,0956,0C08
DVA20	0959	0961,0965,0C0A
DVA21	096B	0970,0974,0C0C
DVA22	0977	097F,0983,0C0E
DVA23	0986	098E,0992,0C10
EOIT	0B12	0A6A,0B12,0BB1,0BC3,0BCA,0BD3,0B09,0BE1,0BE3,0BE5, 0BE7,0BE9,0BEB,0BED,0BEF,0BF1,0BF3,0BF5,0BF7,0BF9, 0BFB,0BFD,0BFF,0C01,0C03,0C05,0C07,0C09,0C0B,0C0D, 0C0F,0C1C,0C10,0C1E,0C1F,0C20,0C21,0C22,0C23,0C24, 0C25,0C26,0C27,0C28,0C29,0C2A,0C2B,0C2C,0C2D,0C2E, 0C2F,0C30,0C31,0C32,0C33,0C93
ENO	012E	07FF,0AE4,0B90
EPA	0B08	
ERBSY	0C72	0C5E
ERCAL	0C74	0C49,0C58,0C62,0C6D
ERROR	0130	C7FF,0C5B
ETY00	083B	0831,0836
ETY01	084A	0840,0845
ETY02	0859	084F,0854
ETY03	0868	085E,0863
ETY04	0B77	086D,0B72
ETY05	0BB6	087C,0881
ETY06	0B95	088B,0890
ETY07	08A4	089A,089F
ETY08	08B3	08A9,08AE
ETY09	08C2	08B8,08BD
ETY10	08D1	08C7,08CC
ETY11	08E0	0806,08DB
ETY12	08EF	08E5,08EA
ETY13	08FE	08F4,08F9
ETY14	0900	0903,0908
ETY15	091C	0912,0917
ETY16	092B	0921,0926
ETY17	093A	0930,0935
ETY18	0949	093F,0944
ETY19	0958	094E,0953
ETY20	0967	0950,0962
ETY21	0976	096C,0971
ETY22	0985	0978,0980
ETY23	0994	098A,098F
INIOI	0A1D	0806,0A30
INT	0AFC	09CD,0B50,0861
IPA	0B06	
LGBSY	0C85	0C70
LOG	012F	07FF,0C7A
LOGDT	0C4E	082D,0B42,0B76,0C4C,0C4D,0C50,0C53,0C55,0C81,0C83
LOGO1	0C75	0C5A
LOGO2	0C7A	0C79,0C86
LOGER	0C4B	0A3C,0A46,0A58,0A64,0AB2,0AC5,0AD6,0B53,0B8A,0C4B, 0C6E,0C70
LOGE1	0C5B	0C73
LOGE2	0C61	0C5F
LPA	0B07	0A2C
MESAG	0C87	0A34,0A38,0A42,0A46,0A50,0A54,0A5E,0AAD,0AB0 0AC0, 0AC3,0ACE,0A01,0AD4,0B28,0B2B,0B39,0B3C,0B40,0B4B, 084E,0B51,0B64,0B5E,0B71,0B7F,0B83,0C52,0C57,0C5D, 0C7C
MLSCF	0809	0A16,0A2E,0C3E
ONE	0AF0	09A2,09BB,0A9F,0AA1
PEND	0C9D	080C
PIBSY	0C16	0BE0
PICMN	0995	082F,0833,0837,0B3E,0842,0846,084D,0851,0855,085C, 0860,0864,0868,086F,0873,087A,087E,0882,0889,088D, 0B91,0898,069C,0BA0,08A7,08AB,08AF,08B6,08BA,08BE, 08C5,08C9,08CD,0804,08D8,08DC,08E3,0BE7,08EB,08F2, 08F6,08FA,0901,0905,0909,0910,0914,0918,091F,0923, 0927,092E,0932,0936,093D,0941,0945,094C,0950,0954,

DI OPC FUNCTION TEST

		095B,095F,0963,096A,096E,0972,0979,097D,0981,0988, 098C,0990,0996,09CF,09D1
PICM1	0988	09B2
PICM2	09C1	09BA
PID	07FF	0A1C
PIRQ	0806	09A7,0986
PIRLD	0C19	0A77,0A78,0A7F,0C37,0C99
PIRQD	080D	0A88,0ABC,0A90,0817,0C14,0C18
PISN	0808	09AD,09BF,09C3
PITBL	0904	0995,09C1,09C9,0A26,0B67,0B74
PI1	0AF3	0988,0806
PI2	0AF4	09C7,0A23,0B78,0B86
RAD	0801	
RDSN	0AFE	0984,098D,0862
RDSW	0AF1	080E,0823,0832,0BBB
READ	0AF6	0AA2,081E
RELDV	0132	07FF,0807,0C1A
REQDV	0131	07FF,08C7,08DE
RID	0800	0A93,080C
RIDO1	0AEC	0A92
RIDO2	08C0	080A
RLEXT	0C37	0A75,0A79,0A7D,0C35
RLS	0C39	0AB6,0ABB,0AE0,0859,08CF,0C16,0C46,0C72,0C85
RLS1	0C42	0C3A,0C3B,0C3C
RQEXT	0C14	0A86,0A8A,0A8E,0C12
RTO1	0A92	0AE9,0AE0
RTO2	080A	0AEA,08C1
SENSE	0AF7	09A9,0A90,081C
SPVSW	0AFF	0A0E,0A97,0ADB,0C65
START	0120	07FF,0C40
SW0	0802	0AE2,08BE,0C75
SW1	0803	0AE6
SW2	0804	0892,0898
SW3	0805	09AF
TERM	0808	08CC,08DA,0C11,0C34

DO FUNCTION TEST

```
0000                     ORG     *+2047                                  82700000
012C               BEGIN EQU     300                                     82700010
012D               START EQU     BEGIN+1                                 82700020
012E               END   EQU     START+1                                 82700030
012F               LOG   EQU     END+1                                   82700040
0130               ERROR EQU     LOG+1                                   82700050
0131               REQDV EQU     ERROR+1                                 82700060
0132               RELDV EQU     REQDV+1                                 82700070
0133               CRCK  EQU     RELDV+1                                 82700080
                   *                                                     82700090
                   *                                                     82700100
                   *****         PROGRAM STATUS TABLE **********         82700110
                   *                                                     82700120
                   *                                                     82700130
07FF 0  2700       PID   DC      /2700     PROGRAM IDENT                 82700140
0800 0  0001       RID   DC      /0001     ROUTINE NUMBER                82700150
0801 0  0000       RAD   DC      /0000     ROUTINE ADDRESS               82700160
0802 0  0000       SW0   DC      /0000     BIT SW FUNC 00 PROG           82700170
0803 0  0000       SW1   DC      /0000                 01 REG            82700180
0804 0  0000       SW2   DC      /0000                 02 MODE           82700190
0805 0  5555       SW3   DC      /5555                 03 PATT           82700200
0806 1  0838       ILP   DC      RTO       INITIALIZATION ADDR           82700210
0807 1  0838       LPA   DC      RTO       LOOP PROG ADDR                82700220
0808 1  0802       EPA   DC      RTEND     PROG END ADDR                 82700230
0809 0  0000       MLSCF DC      /0000     1ST MLSCF NORMAL              82700240
080A 0  0000             DC      /0000     2ND MLSCF BUSY                82700250
080B 0  0000             DC      /0000     3RD MLSCF CK INTR             82700260
080C 0  FFFF       TERM  DC      /FFFF     TERMINATOR                    82700270
080D 1  0AFD             DC      PEND      LAST ADDR OF PROG             82700280
080E 0  0000             DC      /0000                                   82700290
080F 0  0000             DC      /0000                                   82700300
0810 0  0000             DC      /0000                                   82700310
0811 0  0000             DC      /0000                                   82700320
0812 0  0000             DC      /0000                                   82700330
                   *                                                     82700340
0813 0  0000       EDIT  DC      /0000     INTR ILSW CHANNEL             82700350
0814 0  0000             DC      /0000     TIMER COUNT                   82700360
                   *                                                     82700370
                   *                                                     82700380
                   *****         INTERRUPT ROUTINE ************          82700390
                   *                                                     82700400
                   *                                                     82700410
0815 0  0000       DVA   DC      /0000     AREA CODE                     82700420
                   *                                                     82700430
0816 0  0000       DSW12 DC      /0000     RETURN ADDR          SE       82700440
0817 01 0C000908         XIO  L  SENSE     SENSE DSW AND RESET           82700450
0819 01 040008F8         STO  L  WAS       SAVE DSW                      82700460
081B 0  1000       KEEP  NOP               USE FOR TRAP                  82700470
081C 01 4C100823         BSC  L  SCAN,-    BCH ON PLUS OR ZERO           82700480
081E 01 F40008DA   PARI  EOR  L  K8000     REMOVE INTERRUPT BIT          82700490
0820 01 670008DE         LDX  L3 PAROR     GET MLSCF ENTRY               82700500
0822 0  7012             MDX     OUT                                     82700510
                   *                                                     82700520
0823 0  1002       SCAN  SLA     2                                       82700530
0824 01 4C100828         BSC  L  COMD,-    BCH ON PLUS OR ZERO           82700540
0826 01 F40008DA         EOR  L  K8000     REMOVE INTERRUPT BIT          82700550
0828 01 67000883         LDX  L3 CONT      GET MLSCF ENTRY               82700560
082A 0  700A             MDX     OUT                                     82700570
                   *                                                     82700580
082B 0  1001       COMD  SLA     1                                       82700590
082C 01 4C100833         BSC  L  FALSE,-   BCH ON PLUS OR ZERO           82700600
082E 01 F40008DA         EOR  L  K8000     REMOVE INTERRUPT BIT          82700610
0830 01 67000883         LDX  L3 CONT      CONTINUE NO ERROR             82700620
0832 0  7002             MDX     OUT                                     82700630
                   *                                                     82700640
0833 01 6700088C   FALSE LDX  L3 FAKE      GET MLSCF ENTRY               82700650
                   *                                                     82700660
0835 0  6803       OUT   STX   3 MLSCF     SET MLSCF ENTRY               82700670
```


DO FUNCTION TEST

```
0836 01 4C800816         BSC  I  DSW12     RETURN TO MONITOR    SX       82700680
                   *                                                     82700690
                   *                                                     82700700
0838 00 4480012C   GO    BSI  I  BEGIN     CALL ON MONITOR               82700710
083A 1  07FF             DC      PID       ADDR OF PST                   82700720
                   *                                                     82700730
                   *                                                     82700740
                   *****         INITIALIZATION ROUTINE ********         82700750
                   *                                                     82700760
                   *                                                     82700770
083B 0  0000       RTO   DC      /0000     RETURN ADDR          SE       82700780
083C 00 6500FFFF         LDX  L1 /FFFF     ALL ONES                      82700790
083E 0  69C4             STX   1 SW1                                     82700800
                   *                                                     82700810
083F 01 440009C2         BSI  L  REQ       REQUEST DEVICE       SC       82700820
                   *                                                     82700830
0841 0  6208             LDX   2 11                                      82700840
0842 01 C6000900   BUILD LD   L2 DPCWR     LOAD FUNCTION                 82700850
0844 0  E800             OR      DVA       ADD AREA CODE                 82700860
0845 01 D6000900         STO  L2 DPCWR     SET IN I/O COMMAND            82700870
0847 0  72FE             MDX   2 -2                                      82700880
0848 0  70F9             MDX     BUILD                                   82700890
                   *                                                     82700900
0849 01 44000987         BSI  L  REL       RELEASE DEVICE       SC       82700910
                   *                                                     82700920
084B 01 65000851         LDX  L1 RT1                                     82700930
084D 0  69B3             STX   1 RAD       SET ROUTINE ADDRESS           82700940
084E 0  698A             STX   1 MLSCF     SET MLSCF                     82700950
084F 01 4C800838         BSC  I  RTO       RETURN               SK       82700960
                   *                                                     82700970
                   *                                                     82700980
                   *****         DIGITAL OUTPUT DIAGNOSTIC *****         82700990
                   *                                                     82701000
                   *                                                     82701010
0851 01 CC00090C   RT1   LDD  L  MADDR     SET TWO REGS FUNC 01 E        82701020
0853 0  68A0             STX     RAD       UPDATE PROG PROCESS           82701030
0854 01 440008E3         BSI  L  PRINT     USE PRINT ROUTINE    SC       82701040
                   *                                                     82701050
0856 01 6500085C   CHECK LDX  L1 FOUND                                   82701060
0858 01 6D000809         STX  L1 MLSCF                                   82701070
085A 00 4C800120         BSC  I  START     RETURN TO MONITOR             82701080
                   *                                                     82701090
085C 01 C4000803   FOUND LD   L  SW1       NEW REGISTER STORAGE          82701100
085E 01 4C280856         BSC  L  CHECK,+Z  BCH ON MINUS  BIT 0           82701110
0860 0  1008             SLA     8                                       82701120
0861 01 4C280856         BSC  L  CHECK,+Z  BCH ON MINUS  BIT 8           82701130
                   *                                                     82701140
0863 01 44000943         BSI  L  ADDR      SET NEW REGISTERS    SC       82701150
0865 01 4400097F         BSI  L  DATA      SET UP DATA          SC       82701160
0867 01 44000920         BSI  L  MDCHG     SET UP MODE          SC       82701170
0869 0  6897             STX     RAD       UPDATE PROG PROCESS           82701180
                   *                                                     82701190
                   *                                                     82701200
                   *             TWO NEW REGISTERS HERE SET IN           82701210
                   *             AND THE PROG WILL BEGIN HERE            82701220
                   *                                                     82701230
                   *                                                     82701240
086A 0  C098       FIRST LD      SW1       NEW REGISTER STORAGE          82701250
086B 01 F40008DE         EOR  L  REGST     STG OF BOTH REG NUM           82701260
086D 01 44300943         BSI  L  ADDR,-Z   BCH ON PLUS          SC       82701270
                   *                                                     82701280
086F 0  C094             LD      SW2       NEW MODE STORAGE              82701290
0870 01 F40008F9         EOR  L  MODE      OLD MODE STORAGE              82701300
0872 01 44300920         BSI  L  MDCHG,Z-  GET NEW MODE IF PLUS SC       82701310
                   *                                                     82701320
0874 0  C090             LD      SW3       NEW DATA STORAGE              82701330
0875 01 F40008FC         EOR  L  DATA1     OLD DATA STORAGE              82701340
0877 01 4420097F         BSI  L  DATA,Z    GET NEW DATA IF + -  SC       82701350
```

DO FUNCTION TEST

```
                    *                                                     82701360
0879 01 C40008F9          LD   L  MODE        MODE STORAGE                82701370
0878 0  100C              SLA     12          CHECK FOR DELAY             82701380
087C 01 65800814          LDX  I1 EDIT+1      TIMER COUNT                 82701390
087E 01 442809D5          BSI  L  TIMEX,+Z    USE TIMER IF 8 12=1         82701400
                    *                                                     82701410
0880 01 0C000908          XIO  L  SENSE       SENSE DSW AND RESET         82701420
0882 01 D40008F8          STO  L  WAS         SAVE DSW                    82701430
0884 01 442009E3          BSI  L  CKSEN,Z     CHECK DSW BITS FOUND SC     82701440
                    *                                                     82701450
0886 01 C40008F9          LD   L  MODE        MODE OF OPERATION           82701460
                    *                                                     82701470
0888 01 4C04089F          BSC  L  KNOW,E      BCH ON BIT 15               82701480
                    *                                                     82701490
088A 01 C4000908          LD   L  SENSE       SENSE WILL BE ODD           82701500
088C 0  F04A              EOR     K0001       *THEN EVEN                  82701510
088D 01 D4000908          STO  L  SENSE                                   82701520
088F 01 4C040896          BSC  L  CHREG,E     BCH ON BIT 15               82701530
                    *                                                     82701540
                    *             *****************************           82701550
                    *             THIS SECTION IS FOR THE PROGRAM         82701560
                    *             CONTROL WRITE. THE REGISTER             82701570
                    *             NUMBER IS CHANGED EACH TIME AND         82701580
                    *             THE DATA EVERY OTHER TIME SO A          82701590
                    *             COMPARISON MAY BE MADE BETWEEN          82701600
                    *             TWO REGISTERS USING THE SAME            82701610
                    *             DATA.                                   82701620
                    *             *****************************           82701630
                    *                                                     82701640
0891 01 C40008FE          LD   L  XIOWR       COMMON WRITE COMMAND        82701650
0893 0  F043              EOR     K0001       CHANGE DATA ADDR            82701660
0894 01 D40008FE          STO  L  XIOWR                                   82701670
                    *                                                     82701680
0896 01 C40008FF    CHREG LD   L  XIOWR+1                                 82701690
0898 0  E042              AND     KFF00       REMOVE REG NUMBER           92701700
0899 01 EC8008DD          OR   I  REGCK       SET IN REG NUMBER           82701710
089B 0  D063              STD     XIOWR+1                                 82701720
                    *                                                     82701730
089C 0  C040              LD      REGCK       CHANGE REG EACH TIME        82701740
089D 0  F039              EOR     K0001       *ODD THEN EVEN              82701750
089E 0  D03E              STO     REGCK                                   82701760
                    *                                                     82701770
                    *                                                     82701780
                    *****         CHECK FOR ONE TIME PRINTOUT ***         82701790
                    *                                                     82701800
                    *                                                     82701810
089F 01 C4000802    KNOW  LD   L  SWO         PROG CNTL STORAGE           82701820
08A1 0  1009              SLA     9                                       82701830
08A2 01 4C1008AC          BSC  L  WRITX,-     BCH ON NOT PRINT            82701840
08A4 0  F035              EOR     K8C00       REMOVE BIT I2               82701850
08A5 0  1809              SRA     9                                       82701860
08A6 01 D4000802          STO  L  SWO         RESTORE CONTROLS            82701870
08A8 0  C861              LDD     NCHK        MSG- CK CNTL STATUS         82701880
08A9 01 6C000801          STX  L  RAD         UPDATE PROG PROCESS         82701890
08AB 0  4037              BSI     PRINT       USED TO PRINT CNTLS  SC     82701900
                    *                                                     82701910
08AC 01 440009C2    WRITX BSI  L  REQ         REQUEST CHANNEL      SC     82701920
                    *                                                     82701930
08AE 0  084F        WRITE XIO     XIOWR       WRITE FOR DCC OR DPC        82701940
                    *                                                     82701950
08AF 0  0856              XIO     CNTL        INITIATE PULSE IF 88        82701960
                    *                                                     82701970
08B0 0  C048              LD      MODE        MODE OF OPERATION           92701980
08B1 01 4C0408B6          BSC  L  CONTX,E     BCH ON DCC MODE             82701990
08B3 01 44000987    CONT  BSI  L  REL         RELEASE CHANNEL      SC     82702000
08B5 0  7010              MDX     GON                                     82702010
                    *                                                     82702020
08B6 00 65000F00    CONTX LDX  L1 /0F00       TIMER COUNT                 82702030
```


DO FUNCTION TEST

```
08B8 01 440009D5          BSI  L  TIMEX       USE TIMING ROUTINE   SC     82702040
                    *                                                     82702050
08BA 0  C85D              LDD     NNINT       NO INTERRUPT RECD           82702060
08BB 0  7003              MDX     NEXT                                    82702070
                    *                                                     82702080
08BC 0  C853        FAKE  LDD     MFAIO       FALSE INTERRUPT             82702090
08BD 0  7001              MDX     NEXT                                    82702100
                    *                                                     82702110
08BE 0  C857        PAROR LDD     MPAR        PARITY ERROR                82702120
08BF 0  D836        NEXT  STD     MSG                                     82702130
08C0 01 44000987          BSI  L  REL         RELEASE CHANNEL      SC     82702140
08C2 0  C833              LDD     MSG                                     82702150
08C3 01 6C000801          STX  L  RAD         UPDATE PROG PROCESS         82702160
08C5 0  401D              BSI     PRINT                                   82702170
                    *                                                     82702180
08C6 01 C4000802    GON   LD   L  SWO         PROG CONTROL STORAGE        82702190
08C8 01 4C040800          BSC  L  RTECK,E     BCH ON BIT 15               82702200
                    *                                                     82702210
08CA 01 6500086A          LDX  L1 FIRST       GET MLSCF ENTRY             82702220
08CC 01 6D000809          STX  L1 NLSCF       SET MLSCF                   82702230
08CE 00 4C80012D          BSC  I  START       RETURN TO MONITOR    SX     82702240
                    *                                                     82702250
08D0 00 4C80012E    RTECK BSC  I  END         MONITOR END CALL     SC     82702260
                    *                                                     82702270
                    *                                                     82702280
                    *****         ROUTINE END *******************         82702290
                    *                                                     82702300
                    *                                                     82702310
08D2 0  0000        RTEND DC      /0000       RETURN ADDR          SE     82702320
08D3 01 44000987          BSI  L  REL         RELEASE CHANNEL      SC     82702330
08D5 01 4C800802          BSC  I  RTEND       RETURN TO USER       X      82702340
                    *                                                     82702350
                    ***************************************************** 82702360
                    *                                                     82702370
                    *                                                     82702380
                    *                                                     82702390
08D7 0  0001        K0001 DC      /0001       CONSTANT                    82702400
08D8 0  0006        K0006 DC      /0006       CONSTANT                    82702410
08D9 0  0080        K0080 DC      /0080       CONSTANT                    82702420
08DA 0  8000        K8000 DC      /8000       CONSTANT                    82702430
08DB 0  FF00        KFF00 DC      /FF00       CONSTANT                    82702440
08DC 0  F400        NORM  DC      /F400                                   82702450
08DD 1  08FA        REGCK DC      REG1        STARTING REGISTER           82702460
08DE 0  0000        REGST DC      /0000       STG FOR BOTH REG NUM        82702470
08DF 0  0000        SAVE  DC      /0000       REMAINING DSW BITS          82702480
08E0 0  0000              DC      /0000       SHIFT COUNT                 82702490
08E1 0  7001        SING  DC      /7001                                   82702500
08E2 0  0000        TIMER DC      /0000       STORAGE                     82702510
                    *                                                     82702520
                    *                                                     82702530
                    *****         PRINT ROUTINE *****************         82702540
                    *                                                     82702550
                    *                                                     82702560
08E3 0  0000        PRINT DC      /0000       RETURN ADDR          SE     82702570
08E4 0  D811              STD     MSG         SET MSG IN OUTPUT           82702580
                    *                                                     82702590
08E5 00 4480012F    TRY   BSI  I  LOG         CALL ON MON LOGGING         82702600
08E7 1  08F4              DC      LGOUT       ADDR OF MESSAGE             82702610
08E8 1  08ED              DC      LBUSY       LOG BUSY ADDR               82702620
08E9 0  0000              DC      /0000                                   82702630
                    *                                                     82702640
08EA 01 658008E3          LDX  I1 PRINT       GET MLSCF ENTRY             82702650
08EC 0  7002              MDX     OUT2                                    82702660
                    *                                                     82702670
08ED 01 650008E5    LBUSY LDX  L1 TRY         GET NLSCF ENTRY             82702680
08EF 01 6D000809    OUT2  STX  L1 NLSCF       SET MLSCF                   82702690
08F1 00 4C80012D          BSC  I  START       RETURN TO MONITOR    SX     82702700
                    *                                                     82702710
```

DO FUNCTION TEST

```
                        *
                        *****       DEVICE STATUS TABLE **********          82702720
                        *                                                   82702730
                        *                                                   82702740
                        *                                                   82702750
08F4      0000          BSS  E 0                                            82702760
08F4 0    0007  LGBUT  DC     /0007      WORD COUNT                         82702770
08F5 0    0000          DC     /0000      HEX CONTROL                        82702780
08F6 0    0000  MSG    DC     /0000      ERROR MESSAGE NUMBER               82702790
08F7 0    0000          DC     /0000      CODEO MESSAGE                      82702800
08F8 0    0000  WAS    DC     /0000      ERROR OR LAST BSW                  82702810
08F9 0    0000  MODE   DC     /0000      MODE OF OPERATION                  82702820
08FA 0    0000  REG1   DC     /0000      REG ADDR 1                         82702830
08FB 0    0000  REG2   DC     /0000      REG ADDR 2                         82702840
08FC 0    0000  DATA1  DC     /0000      PATTERN 1                          82702850
08FD 0    0000  DATA2  DC     /0000      PATTERN 2                          82702860
                        *                                                   82702870
08FE 1    08FC  XIOWR  DC     DATA1                                          82702880
08FF 0    0000          DC     /0000      COMMON WRITE                       82702890
0900 1    08FC  BPCWR  DC     DATA1                                          82702900
0901 0    0100          DC     /0100      PROG CNTL WRITE                    82702910
0902 1    0975  DCCWR  DC     CONT1                                          82702920
0903 0    0500          DC     /0500      INITIAL WRITE                      82702930
0904 0    0000  BLAST  DC     /0000                                         82702940
0905 0    0420          DC     /0420      BLAST CHANNEL INST                 82702950
0906 0    0000  CNTL   DC     /0000                                         82702960
0907 0    0400          DC     /0400                                         82702970
0908 0    0000  SENSE  DC     /0000                                         82702980
0909 0    0701          DC     /0701      SENSE BSW AND RESET                82702990
                        *                                                   82703000
                        *                                                   82703010
                        *                                                   82703020
                        *                                                   82703030
090A 0    A001  MCHK   DC     /A001                                          82703040
090B 0    CCCC          DC     /CCCC      TYPE TO CHECK DATA                 82703050
                        *                                                   82703060
090C 0    C001  MADDR  DC     /C001      MSG NUMBER                         82703070
090D 0    00AD          DC     /00AD      ENTER REG ADDRESSES                82703080
                        *                                                   82703090
090E 0    E001  MBUSY  DC     /E001                                          82703100
090F 0    AD00          DC     /AD00      BUSY                               82703110
0910 0    E002  MFAIQ  DC     /E002                                          82703120
0911 0    FA10          DC     /FA10      FALSE INTERRUPT                    82703130
0912 0    E003  MERR   DC     /E003                                          82703140
0913 0    81EE          DC     /81EE      BITS IN ERROR                      82703150
0914 0    E004  MBITF  DC     /E004                                          82703160
0915 0    D08F          DC     /D08F      BIT FAILED TO GO OFF               82703170
0916 0    E005  MPAR   DC     /E005                                          82703180
0917 0    D0AE          DC     /D0AE      PARITY ERROR                       82703190
0918 0    E006  MNINT  DC     /E006                                          82703200
0919 0    1CED          DC     /1CED      NO INTERRUPT                       82703210
091A 0    E007  MRONG  DC     /E007                                          82703220
0918 0    8AD0          DC     /8AD0      CYCLE STEAL ERROR                  82703230
091C 0    E008  MERRC  DC     /E008                                          82703240
0910 0    00C8          DC     /B0C8      CHAN BLAST FAILED                  82703250
091E 0    E009  MCNRJ  DC     /E009                                          82703260
091F 0    00CC          DC     /D0CC      COMD REJECT FAILED                 82703270
                        *                                                   82703280
                        *                                                   82703290
                        *****       GET NEW MODE OF OPERATION *****         82703300
                        *                                                   82703310
                        *                                                   82703320
0920 0    0000  MDCHG  DC     /0000      RETURN ADDR          SE            82703330
0921 01   C4000804      LD   L $W2        NEW MODE OF OPER                   82703340
0923 0    D0D5          STD    MODE       OLD MODE STORAGE                   82703350
0924 01   4C04092E      BSC  L OCC,E      BCH ON BIT 15                      82703360
                        *                                                   82703370
0926 01   650008FC      LDX  L1 DATA1                                        82703380
0928 0    69D5          STX    1 XIOWR    SET IN I/O COMMAND                 82703390
```


DO FUNCTION TEST

```
0929 0    C0D7          LD     BPCWR+1                                      82703400
092A 0    E080          AND    KFF00      REMOVE OLD REG                    82703410
092B 0    E8CE          OR     REG1       ADD NEW REG                       82703420
092C 0    0002          STO    XIOWR+1    SET IN I/O COMMAND                82703430
092D 0    7007          MDX    BUILT                                        82703440
                        *                                                   82703450
092E 0    C0CA  DCC    LD     MODE       NEW MODE OF OPER                  82703460
092F 0    E0A8          AND    K0006      SAVE BITS 13 + 14                 82703470
0930 0    1005          SLA    5                                            82703480
0931 0    E8D1          OR     DCCWR+1                                      82703490
0932 0    D0CC          STO    XIOWR+1    SET IN I/O COMMAND                82703500
                        *                                                   82703510
0933 0    C0CE          LD     BCCWR                                        82703520
0934 0    D0C9          STO    XIOWR      I/O COMMAND BUILT                 82703530
                        *                                                   82703540
0935 0    C0C3  BUILT  LD     MODE       MODE OF OPERATION                 82703550
0936 0    1008          SLA    8                                            82703560
0937 01   4C28093C      BSC  L BUILL,+Z   BCH ON MINUS                      82703570
0939 0    C0C0          LD     CNTL+1                                       82703580
093A 0    E0A0          AND    KFF00      REMOVE PULSE OUTPUT               82703590
093B 0    7002          MDX    ALL                                          82703600
093C 0    C0CA  BUILL  LD     CNTL+1                                       82703610
093B 0    E898          OR     K0080      ADD PULSE OUTPUT                  82703620
093E 0    D0C8  ALL    STO    CNTL+1                                       82703630
                        *                                                   82703640
093F 0    4003          BSI    ADDR       GET NEW REG NUMBERS  SC           82703650
                        *                                                   82703660
0940 0    403E          BSI    DATA       SET NEW PATTERN      SC           82703670
                        *                                                   82703680
0941 01   4C800920      BSC  I MDCHG      RETURN TO PROG       SX           82703690
                        *                                                   82703700
                        *                                                   82703710
                        *****       GET NEW REGISTERS **********            82703720
                        *                                                   82703730
                        *                                                   82703740
0943 0    0000  ADDR   DC     /0000      RETURN ADDR          SE           82703750
0944 01   C4000803      LD   L SW1        NEW REGISTER STORAGE               82703760
0946 0    D097          STO    REGST      STORE NEW REGISTERS               82703770
0947 0    1888          SRT    8          ONLY REG1 IN ACC                  82703780
0948 0    D081          STO    REG1       UPDATE REG1                       82703790
0949 0    1008          SLA    8          CLEAR ACC                         82703800
094A 0    1088          SLT    8          ONLY REG2 IN ACC                  82703810
0948 0    00AF          STO    REG2       UPDATE REG2                       82703820
                        *                                                   82703830
094C 0    C0AC          LD     MODE       MODE OF OPERATION                 82703840
094B 01   4C040955      BSC  L CKDCC,E    BCH ON BIT 15                     82703850
                        *                                                   82703860
094F 0    C0B1          LD     OPCWR+1                                      82703870
0950 01   E40008D8      AND  L KFF00      REMOVE MODIFIER                   82703880
0952 0    E8A7          OR     REG1       ADD NEW REG NUMBER                82703890
0953 0    D0AB          STO    XIOWR+1    UPDATE I/O COMMAND                82703900
0954 0    7012          MDX    DONE                                         82703910
                        *                                                   82703920
0955 0    1801  CKDCC  SRA    1                                            82703930
0956 01   4C040963      BSC  L PUT,E      BCH ON BIT 14                     82703940
                        *                                                   82703950
                        *           UPDATE OUTPUT TABLE FOR RANDOM          82703960
                        *                                                   82703970
0958 0    C0A1          LD     REG1       GET REG ADDRESS                   82703980
0959 0    0013          STO    CONT3+2                                      82703990
095A 0    0015          STO    CONT3+6                                      82704000
095B 0    001A          STO    CONT1+1                                      82704010
095C 0    0010          STO    CONT1+3                                      82704020
                        *                                                   82704030
095D 0    C09D          LD     REG2       GET REG ADDRESS                   82704040
095E 0    D010          STO    CONT3+4                                      82704050
095F 0    D013          STO    CONT3+8                                      82704060
0960 0    0017          STO    CONT1+3                                      82704070
```

```
0961 0  D01A            STO     CONT1+7                                 82704080
0962 0  7004            MDX     DONE                                    82704090
                        *                                               82704100
                        *       UPDATE OUTPUT TABLE FOR SINGLE          82704110
                        *                                               82704120
0963 0  C096    PUT     LD      REG1        GET REG ADDRESS             82704130
0964 0  B011            STO     CONT1+1                                 82704140
0965 0  C094            LD      REG1        GET REG ADDRESS             82704150
0966 0  B006            STO     CONT3+2                                 82704160
                        *                                               82704170
                        *                                               82704180
0967 01 6C000801 DONE   STX  L  RAD         UPDATE PROG PROCESS         82704190
0969 01 4C800943        BSC  I  ADDR        RETURN TO PROG              82704200
                        *                                               82704210
                        *                                               82704220
                        *****   OUTPUT TABLE FOR 90  **********         82704230
                        *                                               82704240
                        *                   RANDOM OR SINGLE            82704250
                        *                                               82704260
0968 1  0968    CONT3   DC      CONT3       CAR CHECK                   82704270
096C 0  0008            DC      /0008       SC=00WC=8 SC=00WC=8         82704280
096D 0  0000            DC      /0000       REG1      REG1              82704290
096E 0  0000            DC      /0000       DATA1     DATA2             82704300
096F 0  0000            DC      /0000       REG2      DATA2             82704310
0970 0  0000            DC      /0000       DATA1     DATA2             82704320
0971 0  0000            DC      /0000       REG1      DATA2             82704330
0972 0  0000            DC      /0000       DATA2     DATA2             82704340
0973 0  0000            DC      /0000       REG2      DATA2             82704350
0974 0  0000            DC      /0000       DATA2     DATA2             82704360
0975 0  C008    CONT1   DC      /C008       SC=11WC=8 SC=11WC=8         82704370
0976 0  0000            DC      /0000       REG1      REG1              82704380
0977 0  0000            DC      /0000       DATA1     DATA1             82704390
0978 0  0000            DC      /0000       REG2      DATA1             82704400
0979 0  0000            DC      /0000       DATA1     DATA1             82704410
097A 0  0000            DC      /0000       REG1      DATA1             82704420
0978 0  0000            DC      /0000       DATA2     DATA1             82704430
097C 0  0000            DC      /0000       REG2      DATA1             82704440
097D 0  0000            DC      /0000       DATA2     DATA1             82704450
097E 1  0968    CONT2   DC      CONT3       CHAINING ADDRESS            82704460
                        *                                               82704470
                        *                                               82704480
                        *****   GET NEW DATA PATTERN ***********        82704490
                        *                                               82704500
                        *                                               82704510
097F 0  0000    DATA    DC      /0000       RETURN ADDR           SE    82704520
0980 01 C40008F9        LD   L  MODE        MODE OF OPERATION           82704530
0982 0  1008            SLA     11                                      82704540
0983 0I 4C100989        BSC  L  STAND,-     BCH ON PLUS OR ZERO         82704550
                        *                                               82704560
0985 01 C40008E1        LD   L  SING                                    82704570
0987 0  000E            STO     SPSW1       SET SINGLE PATTERN    PR01  82704580
0988 0  D01F            STO     SPSW2       *SWITCHES             PR02  82704590
                        *                                               82704600
0989 01 C40008F9 STAND  LD   L  MODE        MODE OF OPERATION           82704610
0988 0  1801            SRA     1                                       82704620
098C 01 4C04099F        BSC  L  POT,E       BCH ON BIT 14               82704630
                        *                                               82704640
098E 01 C4000805        LD   L  SW3         NEW DATA PATTERN            82704650
0990 01 040008FC        STO  L  DATA1                                   82704660
0992 0  00D8            STO     CONT3+3                                 82704670
0993 0  D00C            STO     CONT3+5                                 82704680
0994 0  D0E2            STO     CONT1+2                                 82704690
0995 0  D0E3            STO     CONT1+4                                 82704700
                        *                                               82704710
0996 01 F400080C SPSW1  EOR  L  TERM        REVERSE DATA PATTERN PM01   82704720
0998 01 040008FD        STO  L  DATA2                                   82704730
099A 0  00D7            STO     CONT3+7                                 82704740
0998 0  00D8            STO     CONT3+9                                 82704750
```



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099C 0  D0DE            STO     CONT1+6                                 82704760
0998 0  D00F            STO     CONT1+8                                 82704770
099E 0  T012            MDX     BONT                                    82704780
                        *                                               82704790
099F 01 C4000805 POT    LD   L  SW3         NEW DATA PATTERN            82704800
09A1 01 040008FC        STO  L  DATA1                                   82704810
09A3 0  6207            LDX  2  T                                       82704820
09A4 01 D6000976 LOOP   STO  L2 CONT1+1                                 82704830
09A6 0  72FF            MDX  2  -1                                      82704840
09A7 0  70FC            MDX     LOOP                                    82704850
                        *                                               82704860
09A8 01 F400080C SPSW2  EOR  L  TERM        REVERSE DATA PATTERN PM02   82704870
09AA 01 040008FD        STO  L  DATA2                                   82704880
09AC 0  6207            LDX  2  T                                       82704890
09AD 01 D6000960 LOOPA  STO  L2 CONT3+2                                 82704900
09AF 0  72FF            MDX  2  -1                                      82704910
0980 0  70FC            MDX     LOOPA                                   82704920
                        *                                               82704930
0981 01 C40008DC DONT   LD   L  NORM                                    82704940
0983 0  D0E2            STO     SPSW1       SET SINGLE PATTERN    PR01  82704950
0984 0  DCF3            STO     SPSW2       *SWITCHES NORMAL      PR02  82704960
                        *                                               82704970
0985 01 4C8009TF        BSC  I  DATA        RETURN TO PROG        SX    82704980
                        *                                               82704990
                        *                                               82705000
                        *****   RELEASE DEVICE ***************          82705010
                        *                                               82705020
                        *                                               82705030
098T 0  0000    REL     DC      /0000       RETURN ADDR           SE    82705040
0988 01 C4000813        LO   L  EDIT                                    82705050
098A 01 4C1009C0        BSC  L  GOOD,-      CHAN ALREADY RELEASE        82705060
                        *                                               82705070
098C 00 44800132        BSE  I  RELBV       REL DEVICE TO MON     SC    82705080
098E 1  0813            DC      EDIT        INTR AND CHANNEL            82705090
098F 1  080C            DC      TERM                                    82705100
                        *                                               82705110
09C0 01 4C800987 GOOD   BSC  I  REL         RETURN TO PROG        SX    82705120
                        *                                               82705130
                        *                                               82705140
                        *                                               82705150
                        *****   REQUEST DEVICE ***************          82705160
                        *                                               82705170
                        *                                               82705180
09C2 0  0000    REQ     DC      /0000       RETURN ADDR           SE    82705190
09C3 01 C4000813        LO   L  EDIT                                    82705200
09C5 01 4C2809CD        BSC  L  OUT1,+Z     BCH HAVE CHANNEL            82705210
                        *                                               82705220
09CT 00 44800131 ASK    BSI  I  REQDV       REQ DEVICE FROM MON   SC    82705230
09C9 1  09CF            DC      STOBY       BUSY ADDR                   82705240
09CA 1  0813            DC      EDIT        INTR AND CHANNEL            82705250
09CB 1  0815            DC      DVA         AREA CODE                   82705260
09CC 1  080C            DC      TERM                                    82705270
                        *                                               82705280
09CD 01 4C8009C2 OUT1   BSC  I  REQ         RETURN TO PROG        SX    82705290
                        *                                               82705300
09CF 01 650009C7 STOBY  LDX  L1 ASK         GET MLSCF IF BUSY           82705310
09DI 01 6000080A        STX  L1 MLSCF+1     SET MLSCF                   82705320
09B3 00 4C800120        BSC  I  START       RETURN TO MONITOR           82705330
                        *                                               82705340
                        *                                               82705350
                        *****   TIMER FOR A GIVEN TIME ********         82705360
                        *                                               82705370
                        *                                               82705380
09D5 0  0000    TIMEX   DC      /0000       RETURN ADDR           SE    82705390
0906 01 60000BE2        STX  L1 TIMER                                   82705400
09D8 01 650009DE TIMED  LDX  L1 HERE                                    82705413
09DA 01 6000080B        STX  L1 MLSCF+2                                 82705420
090C 00 4C80012D        BSC  I  START       RETURN TO MONITOR           82705430
```

DO FUNCTION TEST

```
                     *                                                   82705440
09DE 01 74FF08E2     HERE  MDX  L  TIMER,-1                              82705450
09E0 0  70F7               MDX     TIMED                                 82705460
09E1 01 4C8009D5           BSC  I  TIMEX      RETURN TO PROGRAM    SX    82705470
                     *                                                   82705480
                     *                                                   82705490
                     *****         CHECK DSW BITS ****************       82705500
                     *                                                   82705510
                     *                                                   82705520
09E3 0  0000         CKSEN DC      /0000      RETURN ADDR          SE    82705530
09E4 0  630F               LDX   3 15                                    82705540
09E5 0  1340         AGAIN SLCA  3 0                                     82705550
09E6 01 F40008DA           EOR  L  K8000      REMOVE BIT FOUND           82705560
09E8 01 D40008DF           STO  L  SAVE       SAVE REMAINING BITS        82705570
09EA 01 6F0008E0           STX  L3 SAVE+1     SAVE SHIFT COUNT           82705580
09EC 01 47800A02           BSI  I3 DSW        GET DSW BIT THATS ON SC    82705590
                     *                                                   82705600
09EE 01 C40008DF           LD   L  SAVE                                  82705610
09F0 01 678008E0           LDX  I3 SAVE+1                                82705620
09F2 01 4C2009E5           BSC  L  AGAIN,Z    BCH ON PLUS OR MINUS       82705630
09F4 01 0C000908           XIO  L  SENSE      SENSE DSW                  82705640
09F6 01 D40008F8           STO  L  WAS        SAVE OSW                   82705650
09F8 01 4C9809E3           BSC  I  CKSEN,+-   RETURN IF ZERO       SX    82705660
                     *                                                   82705670
09FA 01 CC000914           LDD  L  MBITF      MSG- DSW BIT FAILED        82705680
09FC 01 6C000801           STX  L  RAD        UPDATE PROG PROCESS        82705690
09FE 01 440008E3           BSI  L  PRINT      TO PRINT BIT FAILURE SC    82705700
                     *                                                   82705710
0A00 01 4C0008D0           BSC  L  RTECK      TERMINATE PROGRAM    SX    82705720
                     *                                                   82705730
                     *                                                   82705740
                     *                                                   82705750
0A02 1  0A12         DSW   DC      BUSY       BIT 15 BUSY                82705760
0A03 1  0A63               DC      ERR1           14                     82705770
0A04 1  0A63               DC      ERR1           13                     82705780
0A05 1  0A63               DC      ERR1           12                     82705790
0A06 1  0A63               DC      ERR1           11                     82705800
0A07 1  0A63               DC      ERR1           10                     82705810
0A08 1  0A63               DC      ERR1            9                     82705820
0A09 1  0A63               DC      ERR1            8                     82705830
0A0A 1  0A63               DC      ERR1            7                     82705840
0A0B 1  0A63               DC      ERR1            6                     82705850
0A0C 1  0A63               DC      ERR1            5                     82705860
0A0D 1  0A63               DC      ERR1            4 CYCLE STEAL BUSY    82705870
0A0E 1  0A63               DC      ERR1       *INT 3 COMMD REJECT        82705880
0A0F 1  0A63               DC      ERR1       *INT 2 SCAN COMPLETE       82705890
0A10 1  0A51               DC      PULSE           1 PULSE TIMER         82705900
0A11 1  0A63               DC      ERR1       *INT 0 PARITY ERROR        82705910
                     *                                                   82705920
                     *                                                   82705930
                     *****         BUSY ROUTINE *****************        82705940
                     *                                                   82705950
                     *                                                   82705960
0A12 0  0000         BUSY  DC      /0000      RETURN ADDR          SE    82705970
0A13 01 CC00090E           LDD  L  MBUSY      MSG- BUSY                  82705980
0A15 01 6C000801           STX  L  RAD        UPDATE PROG PROCESS        82705990
0A17 01 440008E3           BSI  L  PRINT      TO PRINT BUSY        SC    82706000
0A19 01 440009C2           BSI  L  REQ        REQUEST CHANNEL            82706010
0A1B 01 0C000908           XIO  L  SENSE      SENSE DSW                  82706020
0A1D 01 4C040A20           BSC  L  BSY,E      BCH ON BUSY                82706030
0A1F 0  702F               MDX     CKBIT                                 82706040
                     *                                                   82706050
0A20 0  1004         BSY   SLA     4                                     82706060
0A21 01 4C100A29           BSC  L  XXX,-                                 82706070
0A23 01 CC00091A           LDD  L  WRONG      ERROR MSG                  82706080
0A25 01 6C000801           STX  L  RAD                                   82706090
0A27 01 440008E3           BSI  L  PRINT      USE PRINT ROUTINE    SC    82706100
                     *                                                   82706110
```


DO FUNCTION TEST

```
0A29 01 C4000802     XXX   LD   L  SWO        PROG CONTROLS              82706120
0A2B 0  100A               SLA     10                                    82706130
0A2C 01 4C280A3A           BSC  L  REJT,+Z    BCH ON MINUS               82706140
                     *                                                   82706150
0A2E 01 0C000904           XIO  L  BLAST      CHANNEL BLAST              82706160
0A30 01 0C000908           XIO  L  SENSE      SENSE DSW                  82706170
0A32 01 D40008F8           STO  L  WAS        SAVE DSW                   82706180
0A34 01 4C040A37           BSC  L  NOTE,E     BCH ON BUSY                82706190
0A36 0  7018               MDX     CKBIT                                 82706200
                     *                                                   82706210
0A37 01 CC00091C     NOTE  LDD  L  MERRC      MSG- BLAST FAILED          82706220
0A39 0  7011               MDX     GOT                                   82706230
                     *                                                   82706240
                     *                                                   82706250
0A3A 01 C40007FF     REJT  LD   L  PIO        TELL MONITOR THAT A        82706260
0A3C 00 D4000133           STO  L  CRCK       * CHAN BLAST COMING        82706270
0A3E 01 0C0008FE           XIO  L  XIOWR      GIVE COMD REJECT           82706280
                     *                                                   82706290
0A40 0  6102               LDX   1 2                                     82706300
0A41 0  4093               BSI     TIMEX      USE TIMER            SC    82706310
                     *                                                   82706320
0A42 01 0C000908           XIO  L  SENSE      SENSE OSW                  82706330
0A44 01 D40008F8           STO  L  WAS        SAVE DSW                   82706340
0A46 01 4C040A49           BSC  L  CMDRJ,E    BCH ON BIT 15              82706350
0A48 0  7006               MDX     CKBIT                                 82706360
                     *                                                   82706370
0A49 01 CC00091E     CMDRJ LDD  L  MCMRJ      COMD REJECT FAILED         82706380
0A4B 01 6C000801     GOT   STX  L  RAD        UPDATE PROG PROCESS        82706390
0A4D 01 440008E3           BSI  L  PRINT      USE PRINT ROUTINE    SC    82706400
                     *                                                   82706410
0A4F 01 4C800A12     CKBIT BSC  I  BUSY       RETURN TO PROGRAM    SX    82706420
                     *                                                   82706430
                     *                                                   82706440
                     *****         PULSE TIMER ON ****************       82706450
                     *                                                   82706460
                     *                                                   82706470
0A51 0  0000         PULSE DC      /0000      RETURN ADDR          SE    82706480
0A52 0  6103               LDX   1 3          TIMER COUNT                82706490
0A53 0  4081               BSI     TIMEX      USE TIMING ROUTINE   SC    82706500
                     *                                                   82706510
0A54 01 0C000908           XIO  L  SENSE      SENSE DSW                  82706520
0A56 01 D40008F8           STO  L  WAS        SAVE OSW                   82706530
0A58 0  1002               SLA     2          CK PULSE BIT               82706540
0A59 01 4C900A51           BSC  I  PULSE,-    BCH ON PLUS OR ZERO  SX    82706550
0A5B 01 CC000914           LDD  L  MBITF      BIT FAILED TO GO OFF       82706560
0A5D 01 6C000801           STX  L  RAD        UPDATE PROG PROCESS        82706570
0A5F 01 440008E3           BSI  L  PRINT      USE PRINT ROUTINE    SC    82706580
0A61 01 4C900A51           BSC  I  PULSE      RETURN TO PROG       SX    82706590
                     *                                                   82706600
                     *                                                   82706610
                     *****         ERR1 IN DSW ******************        82706620
                     *                                                   82706630
                     *                                                   82706640
0A63 0  0000         ERR1  DC      /0000      RETURN ADDR          SE    82706650
0A64 01 CC000912           LDD  L  MERR       MSG- BITS IN ERROR         82706660
0A66 01 6C000801           STX  L  RAD        UPDATE PROG PROCESS        82706670
0A68 01 440008E3           BSI  L  PRINT      TO PRINT DSW ERROR   SC    82706680
0A6A 01 4C800A63           BSC  I  ERR1       RETURN TO PROG       SX    82706690
                     *                                                   82706700
                     *                                                   82706710
                     *                                                   82706720
0A6C    0000               BSS  E  0                                     82706730
0A6C                       ORG     PID+/02FE                             82706740
                     *                                                   82706750
                     *                                                   82706760
                     *             THIS AREA CAN BE USED FOR PATCH       82706770
                     *                                                   82706780
                     *                                                   82706790
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```
0AF8 0  0000        PEND  BC     /0000                    02706800
0AFE    0838              END   GO                       02706810
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CROSS REFERENCE LISTING

SYMBOL	VALUE	REFERENCES
ADDR	0943	0863,086D,093F,0969
AGAIN	09E5	09F2
ALL	093E	0938
ASK	09C7	09CF
BEGIN	012C	07FF,0838
BLAST	0904	0A2E
BSY	0A20	0A1D
BUILD	0842	0848
BUILL	093C	0937
BUILT	0935	092D
BUSY	0A12	0A02,0A4F
CHECK	0856	085E,0861
CHREG	0896	088F
CKBIT	0A4F	0A1F,0A36,0A48
CKDCC	0955	094D
CKSEN	09E3	0884,09F8
CMDRJ	0A49	0A46
CNTL	0906	08AF,0939,093C,093E
COND	0828	0824
CONT	0883	0828,0830
CONTX	0886	0881
CONT1	0975	0902,0958,095C,0960,0961,0964,0994,0995,099C,099D,09A4
CONT2	097E	
CONT3	0968	0959,095A,095E,095F,0966,0968,097E,0992,0993,099A,0998,09AB
CRCK	0133	0A3C
DATA	097F	0865,0877,0940,0985
DATA1	08FC	0875,08FE,0900,0926,0990,09A1
DATA2	08F8	0998,09AA
DCC	092E	0924
DCCWR	0902	0931,0933
DONE	0967	0954,0962
DONT	0981	099E
DPCWR	0900	0842,0845,0929,094F
DSW	0A02	09EC
DSW12	0816	0836
DVA	0815	0844,09CB
EDIT	0813	087C,0988,098E,09C3,09CA
END	012E	07FF,08D0
EPA	0808	
ERROR	0130	07FF
ERR1	0A63	0A03,0A04,0A05,0A06,0A07,0A08,0A09,0A0A,0A0B,0A0C,0A0D,0A0E,0A0F,0A11,0A6A
FAKE	088C	0833
FALSE	0833	082C
FIRST	086A	08CA
FOUND	085C	0856
GO	0838	0AFE
GON	08C6	0885
GOOD	09C0	098A
GOT	0A48	0A39
HERE	09DE	09D8
ILP	0806	
KEEP	0818	
KFF00	08D8	0898,092A,093A,0950
KNOW	09F	0888
K0001	0807	088C,0893,089D
K0006	08D8	092F
K0080	08D9	093D
K8000	08DA	081E,0826,082E,08A4,09E6
LBUSY	08ED	08E8
LGOUT	08F4	08E7
LOG	012F	07FF,08E5
LOOP	09A4	09A7

DO FUNCTION TEST

LOOPA	09AD	0980
LPA	0807	
MADDR	090C	0851
MBITF	0914	09FA,0A58
MBUSY	090E	0A13
MCHK	090A	08A8
MCMRJ	091E	0A49
MDCHG	0920	0867,0872,0941
MERR	0912	0A64
MERRC	091C	0A37
MFAIO	0910	088C
MLSCF	0809	0835,084E,0858,08CC,08EF,0981,098A
MNINT	0913	088A
MODE	08F9	0870,0879,0886,0880,0923,092E,0935,094C,0980,0989
MPAR	0916	088E
MRONG	091A	0A23
MSG	08F6	088F,08C2,08E4
MEXT	088F	0885,0880
NGRM	08DC	0981
NOTE	0A37	0A34
OUT	0835	0822,082A,0832
OUT1	09C0	09C5
OUT2	08EF	08EC
PARI	081E	
PAROR	088E	0820
PEND	0AFD	0800
PIO	07FF	083A,0A3A,0A6C
POT	099F	098C
PRINT	08E3	0854,08A8,08C5,0EEA,09FE,0A17,0A27,0A4D,0A5F,0A68
PULSE	0A51	0A10,0A59,0A61
PUT	0963	0956
RAD	0801	084D,0853,0869,08A9,08C3,0967,09FC,0A15,0A25,0A4B, 0A50,0A66
REGCK	08DB	0899,089C,089E
REGST	08DE	0868,0946
REG1	08FA	08D0,0928,0948,0952,0958,0963,096>
REG2	08F8	0948,0950
REJT	0A3A	0A2C
REL	0987	0849,0883,08C0,08D3,09C0
RELDV	0132	07FF,098C
REQ	09C2	083F,08AC,09CB,0A19
REQDV	0131	07FF,09C7
RIO	0800	
RTECK	08D0	08C8,0A00
RTEND	08D2	0808,08D5
RTO	0838	0806,0807,084F
RT1	0851	0848
SAVE	08DF	09E8,09EA,09EE,09F0
SCAN	0823	081C
SENSE	0908	0817,0880,088A,088D,09F4,0A1B,0A30,0A42,0A54
SING	08E1	0985
SPSW1	0996	0987,0983
SPSW2	09A8	0988,0984
STAND	0989	0983
START	012D	07FF,085A,08CE,08F1,09D3,09DC
STDBY	09CF	09C9
SW0	0802	089F,08A6,08C6,0A29
SW1	0803	083E,085C,086A,0944
SW2	0804	086F,0921
SW3	0805	0874,098E,099F
TERM	080C	0996,09A8,098F,09CC
TIMED	0908	09E0
TIMER	08E2	09D6,09DE
TIMEX	09D5	087E,0888,09E1,0A41,0A53
TRY	08E5	08E0
WAS	08F8	0819,0882,09F6,0A32,0A44,0A56
WRITE	08AE	
WRITX	08AC	08A2

DO FUNCTION TEST

XIOWR	08FE	0891,0894,0896,0898,08AE,0928,092C,0932,0934,0953, 0A3E
XXX	0A29	0A21

TABLE OF CONTENTS

1. PURPOSE

THE DIGITAL OUTPUT FUNCTION TEST IS DESIGNED TO EXERCISE AND TEST THE RELIABILITY OF THE OUTPUT REGISTERS IN ALL MODES.

2. REQUIREMENTS

2.1 PROGRAM REQUIREMENTS

THIS PROGRAM MUST RUN UNDER CONTROL OF THE DIAGNOSTIC MONITOR. THE DIAGNOSTIC MONITOR PROGRAM USES 2,047 STORAGE WORDS, AND THIS PROGRAM USES 0768 STORAGE WORDS.

THIS PROGRAM MUST HAVE EDIT CARDS ADDED AT THE END OF THE DECK. SEE EDIT PROCEDURE, PARAGRAPH 6.1 .

2.2 EQUIPMENT REQUIREMENTS

A. EQUIPMENT REQUIRED BY DIAGNOSTIC MONITOR, PLUS

B. MINIMUM OF ONE DIGITAL OUTPUT CONTROL (DOC),

C. MINIMUM OF ONE DIGITAL OUTPUT ADAPTER,

D. AT LEAST ONE OF THE FOLLOWING GROUPS,

1. ELECTRONIC CONTACT OPERATE (ECO).
2. PULSE OUTPUT (PO).
3. REGISTER OUTPUT (RO).

E. IF CYCLE STEAL IS TO BE CHECKED, A DATA CHANNEL MUST BE AVAILABLE

3. USE PROCEDURE

3.1 PROGRAM LOADING

STANDARD LOADING PROCEDURE AS DESCRIBED IN THE DIAGNOSTIC MONITOR USE PROCEDURE.

3.2 PROGRAM OPERATION

STANDARD MONITOR OPERATING PROCEDURES APPLY.
THESE PROCEDURES ARE SUMMARIZED HERE. SEE DM USE PROCEDURE FOR DETAILS.

1. CLEAR STORAGE
2. LOAD DIAGNOSTIC MONITOR
3. SELECT MODE OF EXECUTION
4. SELECT MONITOR CONTROL OPTIONS
5. SELECT PROGRAM OPTIONS FROM,

TABLE 0 PROGRAM CONTROL FUNCTION.
TABLE 1 REGISTER NUMBER
TABLE 2 MODE OF OPERATION
TABLE 3 DATA PATTERN

6. INSTRUCT MONITOR TO EXECUTE
7. SELECT REGISTER NUMBERS PER TABLE 1.

TABLE 0 CONTROL FUNCTION

SENSE/PROGRAM 0 1 2 3 4 5 6 7	
0 0 1 0 0 1 1 1	1. SET FUNCTION 00 IN SENSE/PROGRAM SWITCHES 0 AND 1. 2. SET PIO IN SENSE/PROGRAM SWITCHES 2 THROUGH 7. 3. SET DESIRED CONTROL OPTIONS IN DATA ENTRY SWITCHES 0-15. 4. PRESS CONSOLE INTERRUPT.

DATA ENTRY SWITCHES 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	DESCRIPTION
. . . . . 1..	TERMINATE PROGRAM
. 1.	USE COMMAND REJECT. SEE NOTE 1.
1.	FORCE PRINTOUT (SEE SECT. 5.2)

NOTE 1. MUST BE RUNNING UNDER DC CONTROL WITH EXTERNAL SYNC.

NOTE 1

DO NOT SPECIFY REGISTER NUMBERS (TABLE 1) UNTIL AFTER MONITOR IS INSTRUCTED TO EXECUTE THIS PROGRAM.

TABLE 1 REGISTER NUMBER

SENSE/PROGRAM 0 1 2 3 4 5 6 7	
C I 1 0 0 1 1 1	1. SET FUNCTION 01 IN SENSE/PROGRAM SWITCHES 0 AND 1. 2. SET PIO IN SENSE/PROGRAM SWITCHES 2 THROUGH 7. 3. SET REGISTER NUMBER IN DATA ENTRY SWITCHES 1-7 AND 9-15. 4. PRESS CONSOLE INTERRUPT.

DATA ENTRY SWITCHES 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	DESCRIPTION
0 X X X X X X X 0 0 0 0 0 0 0 0	REGISTER 1 NUMBER
0 0 0 0 0 0 0 0 X X X X X X X X	REGISTER 2 NUMBER

TABLE 2 MODE OF OPERATION

SENSE/PROGRAM 0 1 2 3 4 5 6 7	
I 0 1 0 0 1 1 1	1. SET FUNCTION 10 IN SENSE/PROGRAM SWITCHES 0 AND 1. 2. SET PIO IN SENSE/PROGRAM SWITCHES 2 THROUGH 7. 3. SET MODE OF OPERATION IN DATA ENTRY SWITCHES 0-15. 4. PRESS CONSOLE INTERRUPT.

DATA ENTRY SWITCHES 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	DESCRIPTION
. . . . . 1..	DATA CHANNEL CONTROL
. . . . . 1.....	SINGLE REGISTER
. . . . . 1.....	USE EXTERNAL SYNC
. . . . 1.....	USE 20 MSEC DELAY
. . . 1.....	USE SINGLE DATA PATTERN (DOES NOT COMPLEMENT PATTERN).
. . ..	NOT USED
. .....	NOT USED
I.....	USE PULSE OUT CONTROL (SEE NOTE 2)

NOTE 2

ALL PULSE OUT REGISTERS ARE RESET WHEN A XIO CONTROL COMMAND IS GIVEN. BE SURE ALL CUSTOMER'S DEVICES ATTACHED TO PULSE OUT REGISTERS ARE DISCONNECTED BEFORE USE PULSE OUT OPTION.

TABLE 3 DATA PATTERN SELECTION

SENSE/PROGRAM 0 1 2 3 4 5 6 7	
1 1 1 0 0 1 1 1	1. SET FUNCTION 11 IN SENSE/PROGRAM SWITCHES 0 AND 1. 2. SET PIO IN SENSE/PROGRAM SWITCHES 2 THROUGH 7. 3. SET DATA PATTERN IN DATA ENTRY SWITCHES 0-15. 4. PRESS CONSOLE INTERRUPT.

DATA ENTRY SWITCHES D 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	DESCRIPTION
X X X X X X X X X X X X X X X X	DATA PATTERN OF YOUR CHOICE (DATA 1)

3.3 PROGRAM HALTS

THIS PROGRAM HAS NO HALTS

3.4 PROGRAM TERMINATION

THE PROGRAM MAY BE TERMINATED THRU NORMAL MONITOR CONTROL.

4. PRINTOUTS

THIS PROGRAM WILL HAVE ONE FORMAT FOR ITS MESSAGES WHICH WILL LOOK LIKE THE FOLLOWING.

PIO MID RID RAD MSG DSW MODE REG1 REG2 DATA1 DATA2

THE FIRST 4 ARE STANDARD MONITOR PRINT OUTS. RAD WILL BE THE ADDRESS OF THE PRINTOUT INSTRUCTION. MSG IS A CODE MESSAGE IN HEX.
DSW IS THE DSW AT THE TIME OF THE PRINTOUT.
MODE IS THE TYPE OF OPERATION BEING PREFORMED. REFER TO TABLE 2.

REG 1 IS THE REGISTER THAT IS BEING CHECKED
REG 2 IS THE ALTERNATE REGISTAR USED TO COMPARE REG 1
DATA 1 IS THE DATA PATTERN SELECTED IN BIT SWITCH FUNCTION 03.
DATA 2 IS THE REVERSE OF DATA 1

4.1 STATUS MESSAGE

2700 AC01 C001 RAD CCCC
THIS MESSAGE IS FOR THE CE SO HE MAY KNOW THE STATUS OF PROGRAM WHILE IT IS RUNNING.

4.2 COMMAND MESSAGES.

2700 C001 C001 RAD D0AD

****

BE SURE YOUR REGISTERS ARE AVAILABLE FOR TESTING.

****

THIS MESSAGE IS A COMMAND FOR THE OPERATOR TO ENTER TWO REGISTER NUMBERS TO BE USED IN TESTING DO. REG1 WILL BE ENTERED IN BIT SWITCHES 1 THRU 7 AND REG 2 WILL BE ENTERED IN BIT SWITCHES 9 THRU 15 OF FUNCTION 01. IF ONLY ONE REGISTER IS TO BE USED IT MUST BE ENTERED IN BOTH PLACES. CHECK TO BE SURE THE REGISTERS YOU USE ARE NOT TIED TO A CUSTOMERS DEVICE.

4.3 ERROR MESSAGES.

27C0 EC01 C001 RAD AD00
THIS IS AN INDICATION THE CHANNEL WAS BUSY WHEN THE DSW WAS SENSED. THIS IS A NORMAL PRINTOUT WHEN EXTERNAL SYNC IS USED.

27C0 EC02 C001 RAD FA10
THIS PRINTOUT INDICATES A FALSE INTERRUPT. THE MONITOR CAME TO THIS PROGRAM BUT NONE OF THE BITS THAT CAUSE AN INTERRUPT WERE SET.

27C0 EC03 C001 RAD B1EE
B1EE STANDS FOR BITS IN ERROR AND INDICATES AN UNUSED DSW BIT BECAME ACTIVE OR CYCLE STEAL BUSY WAS ON DURING EXTERNAL SYNC.

27C0 EC04 C001 RAD 00BF
THIS IS AN INDICATION THAT SOME DSW BIT CAN NOT BE RESET. THE PROGRAM WILL GO TO END.

27C0 EC05 C001 RAD D0AE
THIS PRINTOUT INDICATES THERE IS A PARITY ERROR IN THE DATA PATTERN SENT OUT ON THE BUS.

27C0 EC06 C001 RAD 1CED
AFTER A WRITE COMMAND IN DC MODE, AN INTERRUPT WAS MISSED. THE PROGRAM WILL CONTINUE AFTER THIS PRINTOUT.

27C0 EC07 C001 RAD BAD0
CYCLE STEAL BUSY, DSW BIT 4 SHOULD NOT HAVE BEEN ON.

27C0 EC08 C001 RAD 00C8
AFTER GIVING A BLAST CHANNEL COMMAND THE BUSY BIT IN THE DSW IS STILL ON.

27C0 EC09 C001 RAD D0CC
IF THE CHANNEL IS BUSY AND A SECOND WRITE COMMAND IS GIVEN A COMMAND REJECT BIT IN THE DSW SHOULD GIVE AN INTERRUPT. IF THIS FAILS THE ABOVE PRINTOUT IS GIVEN.

5. COMMENTS

****
CAUTION
****
WHEN RUNNING THIS DIAGNOSTIC, BE SURE THE REGISTERS ARE NOT CONNECTED TO A CUSTOMER DEVICE. DEPRESSING MACHINE RESET BUTTON WILL SET ALL DIGIT OUTPUT REGISTERS TO ZERO.

5.1 GENERAL DESCRIPTION

DIGITAL OUTPUT CONSISTS OF A MAINLINE ROUTINE THAT WILL CHECK TO DETERMINE THE NEED FOR VARIOUS SUBROUTINES. THE PROGRAM BEGINS WITH THE SELECTING OF TWO REGISTERS TO BE TESTED. IF ONLY ONE REGISTER IS TO BE TESTED, THE REGISTER NUMBER IS ENTERED TWICE. THE DATA PATTERN IS ALTERNATING BITS OFF AND THEN ON. THIS MAY BE CHANGED BY ENTERING YOUR PATTERN THRU FUNCTION 3. THE STARTING MODE IS DATA PROCESS CONTROL (DPC) WITH RANDOM ADDRESS. THE MODE MAY BE CHANGED THRU FUNCTION 2. SEE TABLE 2.

THE MAINLINE CHECKS TO DETERMINE IF THERE HAS BEEN A CHANGE IN REGISTER ADDRESSES, MODES OF OPERATION, OR DATA PATTERN. IF THERE IS ANY CHANGE, THE APPROPRIATE SUBROUTINE WILL UPDATE THE CHANGE. THE PROGRAM WILL SWITCH BACK AND FORTH USING THE TWO REGISTERS SO THE CE MAY SCOPE A GOOD REGISTER AND ONE WHERE THE OUTPUT IS IN DOUBT. IF BIT 9 FUNCTION 2 IS USED, THE DATA PATTERN WILL NOT SHIFT, AND THIS CAN BE USED TO MEASURE VOLTAGE LEVELS.

A WRITE COMMAND IS GIVEN AND IF IN DCC MODE THE PROGRAM WILL DELAY WAITING FOR AN INTERRUPT. AFTER THE INTERRUPT, IT WILL BE CHECKED FOR ERRORS AND THEN DETERMINE IF THE PROGRAM IS TO BE TERMINATED, OR IS TO LOOP THRU ANOTHER TIME.

5.2 COMMENTS FOR FUNCTION 0

ADDITIONAL COMMENTS FOR THE FOLLOWING DATA ENTRY SWITCHES FOLLOW.

SW 15 CAUSES PROGRAM TO TERMINATE RATHER THAN GIVE ANOTHER WRITE COMMAND.

SW 10 WHEN EXTERNAL SYNC IS USED, THE CHANNEL WILL BECOME BUSY AND A NORMAL ERROR PRINTOUT WILL OCCUR. BLAST CHANNEL WILL BE ISSUED UNLESS SW 10 IS ON, IN WHICH CASE A COMMAND REJECT IS ISSUED. THE PRINTOUT WILL BE E001.

SW 9 USED TO CAUSE A PRINTOUT OF THE DSW, MODE OF OPERATION, REGISTERS, AND PATTERN USED. THE PRINTOUT WILL OCCUR ONLY ONCE FOR EACH SETTING OF THE SWITCH.

5.3 COMMENTS FOR FUNCTION 1

THE REGISTERS TO BE TESTED ARE ENTERED THRU THE DATA ENTRY SWITCHES. SWITCHES 1 THRU 7 ARE USED TO SELECT REGISTER 1, AND SWITCHES 9 THRU 15 ARE USED TO SELECT REGISTER 2. IF ONLY ONE REGISTER IS TO BE CHECKED, THE REGISTER NUMBER IS ENTERED IN BOTH SETS OF SWITCHES.

5.4 COMMENTS FOR FUNCTION 2

UNLESS A MODE SETTING IS ENTERED THE PROGRAM WILL SET UP FOR OPC CONTROL USING RANDOM MODE. THE MODE MAY BE CHANGED BY USING THE FOLLOWING DATA ENTRY SWITCHES UNDER FUNCTION 2,

SW 15 DATA CHANNEL CONTROL. DCC IS ON CYCLE STEAL AND OPERATES AT A VERY FAST SPEED. OFTEN IT WILL NOT SHOW A GOOD PATTERN.

SW 14 IF THIS SWITCH IS OFF, IT IS IN RANDOM MODE. REGISTER 1 IS USED AND THEN REGISTER 2 AND BACK AND FORTH. WITH THIS SWITCH ON, REGISTER 1 IS USED AND THE PATTERN SENT OUT SEVEN TIMES, AND THEN REGISTER 2 IS USED IN THE SAME MANNER.

SW 13 WITH THIS BIT SET ON, THE CHANNEL WILL BECOME BUSY BECAUSE EXTERNAL SYNC IS USED AND IT IS NOT CONNECTED SO IT WILL NOT RECEIVE A PULSE. SINCE THE CHANNEL IS BUSY, AN ERROR MESSAGE E001 WILL BE PRINTED. A CHANNEL BLAST OR COMMAND REJECT WILL BE EXECUTED DEPENDING ON BIT 10 FUNCTION 0.

SW 12 WITH THIS BIT ON THE PROGRAM WILL USE A MINIMUM DELAY OF 20 MS. AND WITH OTHER PROGRAMS OPERATING IN OVERLAP IT WILL BE LONGER. THIS DELAY WILL NOT BE VERY USEFUL ON DCC BECAUSE OF CYCLE STEAL.

SW 11 NORMALLY THE DATA PATTERN IS REVERSED SO THE SHIFT CAN BE SEEN ON THE SCOPE. WITH THIS SWITCH ON, THE SAME DATA PATTERN WILL BE SENT OUT WITH EACH WRITE COMMAND.

SW 8 THIS BIT IS USED TO CAUSE A PULSE OUTPUT. IT IS USED IN IOCC CONTROL WORD.

5.5 COMMENTS FOR FUNCTION 3

ALL BIT SWITCHES ARE USED TO SET UP THE DATA PATTERN THAT IS READ OUT TO THE REGISTERS SELECTED.

6.1 EDIT PROCEDURE

THE FOLLOWING EDIT PROCEDURE IS FOR CARD INPUT. THE EDIT PROCEDURE FOR PAPER TAPE INPUT IS LOCATED IN THE PAPER TAPE EDIT UTILITY PROGRAM DOCUMENTATION. THE PROPER EDIT CARDS MUST BE THE LAST CARDS IN THIS PROGRAM DECK. THE FOLLOWING FORMS ARE PROVIDED TO AID IN MANUALLY PREPARING THESE EDIT CARDS OR UPDATING EXISTING EDIT CARDS. IF IT IS NECESSARY TO PREPARE OR MODIFY EDIT CARDS, FILL IN THE NECESSARY DATA IN THE FORMS PRIOR TO PUNCHING THE CARDS. CARD COLUMNS THAT ARE SHADED SHOULD BE LEFT BLANK.

DDEF STANDS FOR DEVICE DEFINITION EDIT FIELD. IT INCLUDES:
1. THE INTERRUPT LEVEL ASSOCIATED WITH THIS DEVICE (USE HEX NOTATION, 00-17).
2. THE ILSW BIT POSITION ASSOCIATED WITH THIS DEVICE (USE HEX NOTATION, 0-F).
3. THE CHANNEL ASSIGNED TO THIS DEVICE (0-8). IF THIS IS A DPC DEVICE, PUNCH AN "F" IN THE CARD COLUMN.

THE LAST EDIT CARD IS THE "END EDIT CARD". THE INFORMATION IN THIS CARD INCLUDES:
1. AN "E" IN COLUMN 1.
2. THE PID FOR THIS PROGRAM (COL 2-3).
3. A TERMINATOR WORD OF "FFFF" (COL. 7-10).

	PROGRAM ID		CARD SEQUENCE NUMBER		NUMBER OF EDIT ENTRIES	DDEF: INTERRUPT LEVEL (HEX)	DDEF: ILSW BIT (HEX)	DDEF: CHANNEL (OR F)	TIMER COUNT APPROX. 1 MS PER LOOP (HEX)
COLUMN	1 2	3 4 5 6	7 8	9 10	11 12 13 14 15	16 17	18	19 20	21 26 31 36 41 46 51 56 61 66 71
CARD 0	E	2 7 0 0	E D	0 0	0 0 0 2				0 0 1 0
END	E	2 7 0 0	F F	F F					

CARD 0 CONTAINS THE DDEF FOR THE D.A.O. FEATURE.

CARD END IS THE "END EDIT CARD". PUNCH EXACTLY AS IS SHOWN.